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Transmitted herewith for filing are the  
☒ specification; ☒ claims; ☒ abstract; ☒ unexecuted  
 declaration, for the above-identified patent application.

[x] 45 sheets of:

[x] Informal drawings. Formal drawings will be filed during the pendency of this application.

(country)	(appln. no.)	(filed)
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from which priority is claimed.

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[ ] An assignment of the invention to \_\_\_\_\_.

[ ] A check in the amount of \$40.00 to cover the recording fee.

[ ] Please charge \$40.00 to Deposit Account No. 06-1075 in payment of the recording fee. A duplicate copy of this transmittal letter is transmitted herewith.

[ ] An associate power of attorney.

The filing fee has been calculated as shown below:

FOR	NUMBER FILED	NUMBER EXTRA	RATE	FEE
BASIC FEE				\$690.00
TOTAL CLAIMS	32	- 20 = 12	X \$18 =	\$216.00
INDEPENDENT CLAIMS	4	- 3 = 1	X \$78 =	\$ 78.00
[ ] MULTIPLE DEPENDENT CLAIMS			+ \$260 =	
TOTAL				<u>\$984.00</u>

[x] A check in the amount of \$984.00 in payment of the filing fee is transmitted herewith.

[ ] This application is being filed unaccompanied by a filing fee. The appropriate filing fee will be paid in response to a Notice to File Missing Parts, pursuant to 37 C.F.R. § 1.53(f).

[ ] Amend the specification by inserting before the first line the sentence: -- This is a [ ] continuation-in-part, of application Serial No.: \_\_\_\_\_, filed  
entitled \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

- [illegible]

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## APPLICATION INFORMATION

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Title Line Three:: OL  
Total Drawing Sheets:: 45  
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Secrecy Order in Parent Appl.?:: No

REPRESENTATIVE INFORMATION

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CONTINUITY INFORMATION

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> Application One:: 60/147982  
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Source:: PrintEFS Version 1.0.1

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This application claims the benefit of  
United States provisional application No. 60/147,982,  
filed August 9, 1999.

This invention relates to interactive television program guide systems, and more particularly, to parental control techniques for use in interactive television program guide systems.

Interactive program guides are typically implemented on set-top boxes. Such program guides allow users to view television program listings in different display formats. For example, a user may instruct the program guide to display a grid of program listings organized in a channel-ordered or a time-

ordered list. Users may also search and sort program listings by theme (e.g., movies, sports, etc.) or by title (i.e., alphabetically). A user may obtain additional information for a program by placing a highlight region on a desired program listing and pressing an "info" key. The user may purchase a pay program from the program guide or may set a reminder for a future program by placing the highlight region on a program listing and pressing an "OK" key. Some systems allow the user to select a program for recording by placing the highlight region on a program listing and pressing a "record" key.

Some known interactive program guides offer a parental control feature. Using this feature, access to programming may be parentally controlled based on certain program characteristics, such as program titles, ratings, times, or channels. For example, a program guide may block certain programming based on program characteristics that have been selected by a user (e.g., a parent). In such systems, blocked programming may be unblocked by entering a parental control code.

Purchase control is offered in some interactive program guides. When a user attempts to make a purchase through the interactive program guide, such as an impulse pay-per-view purchase, the interactive program guide may ask the user for a purchase code, and may not allow the purchase to be completed unless the purchase code is entered.

In such systems, parents are not able to specify different levels of control for children at different levels of maturity or responsibility. This

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To set up a parental control criteria, a user may select a parental control feature. The system may display an overlay or display screen prompting for a program control code of a parent account when a parental control feature is selected. When there are multiple parent accounts, a prompt for each parent account may be provided. Access to a parental control feature may be provided when a program control code for at least one parent account has been entered.

Correct entry of a program control code for a parent account may allow a user to create parental control criteria for accounts (e.g., all accounts in a household). For example, the system may display a parental control criteria display screen that allows a user to navigate between subscreens for each account (e.g., by pressing a left or right arrow key on a remote control). Each subscreen may provide a user with an opportunity to specify lock criteria for the account that is associated with that subscreen. If desired, the subscreens may only be for non-parent accounts.

Within the parental control criteria display subscreen, the user may navigate (e.g., by pressing an up or down arrow key on the remote control) between individual attribute categories (e.g., title, movie rating, TV rating, channel, time, etc.). The user may be allowed to navigate between attribute values for each category (e.g., by pressing a left or right arrow key for each category). As each attribute value is displayed, the system may display an indicator (e.g., an icon), showing whether that particular attribute value is already locked for the account that is associated with the current subscreen. The user may be

allowed to change the lock status of attribute values (e.g., by pressing a lock or data entry key of a remote control).

If desired, the system may display a display screen having a list of attribute categories, may allow a user to navigate between attribute values for each, and may allow the user to change the lock status of each value. An indicator for each value may be displayed to reflect whether any of the accounts has that value locked. When a user is finished, the system may display a list of the accounts (preferably, none of which are parent accounts) and may allow a user to select to which accounts the changed settings should apply.

If desired, the system may allow the user to select some of the accounts before setting the lock criteria. An indicator may be displayed with each attribute value that reflects whether any of the selected accounts has that attribute value currently locked. The settings for each of the selected accounts may change when the lock status of each attribute value is changed.

If desired, parental control criteria may be set using an example. The system may allow the user to select a program in connection with a parental control feature. When a program is selected in connection with the parental control feature, the system may prompt a user for the entry of a parent program control code. The system may display a lock by example overlay or display screen when a correct parent program control code is entered. The overlay or display screen may include attribute values for the selected program. The system may allow the user to navigate to the program

attribute values and change the lock status for each. The changes may be applied to different accounts using subscreens or by prompting the user to select accounts before or after making changes to the settings.

5           If desired, attribute values may be entered using a keyboard, a remote control, a display remote control, a search display screen, etc. If desired, a parental control criteria display screen may have an add-a-title lock option.

10           The system may have a list of active locks. Each active lock may be related to a particular value for an attribute category. Each lock that is active for a particular attribute value may be associated with a list of authorized accounts that are to be allowed to  
15 view programming having that particular locked attribute value after entry of an appropriate code.

          The system may block audio and video of a program and prompt for the entry of a program code when a user attempts to watch a program that has an  
20 attribute value that has been locked. Users may be prompted for the entry of their codes using an overlay or display screen that provides the names of accounts and a space next to each account name. The names that are included in the display or overlay may be the  
25 account names for the accounts that are authorized to view the program. Account names for accounts that are not authorized may be omitted from being displayed or may be displayed in a way that shows that code entry is for other accounts that are authorized to view the  
30 program. The system may remove the overlay or display screen and may play the audio and video of a blocked program when at least one valid code for a parent

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account or for an account that is authorized to view the program is entered.

When a user has entered a control code to watch a program and the program ends and a subsequent program that is locked begins, the system may again force entry of a control code. If desired, the system may continue to allow user access when a subsequent locked program begins as long as the channel is not changed. Whether the system forces another code entry may also depend on the attribute category of a lock, the last entered control code, or both.

When a user locks a rating, the system may lock all programs (e.g., blocks access to program audio and video) that have a rating that exactly matches the locked rating. If desired, the system may lock all programs that match the locked rating exactly and match higher ratings.

If desired, the system may force another code entry when any locked program is tuned, even if the user had previously entered a code to watch that same program (e.g., another code entry may be forced when a user returns to viewing a particular airing of a program for which the user had already earlier entered a code when the channel for that program was first tuned to watch that airing of that program).

The system may include a bypass locks feature. Access to the bypass locks feature may be provided when a program control code is entered. If desired, access to the bypass locks feature may be limited to parent accounts. When a user turns on the bypass locks feature, all programming may be viewed without requiring code entry. The bypass may be turned off automatically when a user turns the system on or

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The system may provide parental control of purchasing based on the features that are provided for parental control of programming. A user (preferably a parent) may be provided with an opportunity to specify whether each account is authorized to make purchases. If desired, the system may allow the user to specify what types of purchases are to be allowed for each account. If desired, the system may allow the user to specify how much an account is authorized to spend. When a user attempts to make a purchase through the system, the system may display an overlay or display screen that allows entry of a purchase control code from any of the accounts that are authorized to make such purchases and which have not exceeded their spending limits. If desired, the system may allow any one of the users to enter their purchase control code, determine whether that account is authorized to make the current purchase, notify unauthorized users that their purchase attempt has been blocked, and allow authorized users to complete the purchase.

The system may track account usage. The system may use this information to list parentally controlled programs that have been accessed, to display a list of purchases that have been made, to provide tracking information to a billing entity, etc. The system may display targeted advertising based on which code was entered last.

30           A user (preferably, a parent) may be provided with an opportunity to select between multiple-level parental control and single account parental control features. If desired, multiple-level parental control

Further features of the invention, its nature and various advantages will be more apparent from the accompanying drawings and the following detailed description of the preferred embodiments.

FIG. 1a is a diagram of an illustrative interactive television program guide system in accordance with the present invention.

FIG. 2 is a diagram of an illustrative sequence of illustrative display screens for use in parental control setup in accordance with the present invention.

25                FIGS. 4a and 4b are diagrams of an  
illustrative sequence of illustrative display screens  
for controlling accounts in accordance with the present  
invention.

FIGS. 5a and 5b are diagrams of an  
30 illustrative sequence of illustrative display screens  
for controlling accounts in accordance with the present  
invention.

FIG. 7 is a flow chart of illustrative steps involved in setting parental program control criteria in accordance with the present invention.

FIG. 8b is an illustrative sequence of illustrative display screens that is based on the illustrative steps of FIG. 7 in accordance with the present invention.

FIG. 10a is a diagram of an illustrative  
20 sequence of illustrative display screens that is based  
on the illustrative steps of FIG. 9 in accordance with  
the present invention.

FIG. 11 is a flow chart of illustrative steps involved in setting parental control criteria by first selecting accounts in accordance with the present invention.

FIG. 13 is a flow chart of illustrative steps involved in setting parental control criteria by example in accordance with the present invention.

FIG. 15 is a diagram of an illustrative sequence of illustrative display screens that is based on the illustrative steps of FIG. 13 in accordance with the present invention.

FIG. 17 is a flow chart of illustrative steps involved in controlling program viewing based on parental control criteria in accordance with the present invention.

FIG. 18b is a diagram of an illustrative  
25 sequence of illustrative display screens that is based  
on the illustrative lock list of FIG. 18a in accordance  
with the present invention.

FIG. 19a is a diagram of an illustrative lock list in accordance with the present invention.



FIGS. 19c and 19d are diagrams of illustrative display screens that are based on the illustrative lock list of FIG. 19a in accordance with the present invention.

FIG. 20b is a diagram of an illustrative sequence of illustrative display screens that is based on the illustrative lock list of FIG. 20a in accordance with the present invention.

FIG. 20d is a diagram of an illustrative  
20 sequence of illustrative display screens that is based  
on the illustrative lock list of FIG. 20a in accordance  
with the present invention.

FIG. 21b is a diagram of an illustrative sequence of illustrative display screens that is based on the illustrative lock list of FIG. 20a in accordance with the present invention.

FIG. 21c is a diagram of an illustrative sequence of illustrative display screens that is based

FIG. 22a is a diagram of an illustrative lock list in accordance with the present invention.

FIG. 22b is a diagram of an illustrative sequence of illustrative display screens that is based on the illustrative lock list of FIG. 22a in accordance with the present invention.

FIG. 23a is a diagram of an illustrative  
10 sequence of illustrative display screens that involve  
removing a lock on a rating in accordance with the  
present invention.

FIG. 23b is a diagram of two illustrative display screens that are based on the illustrative display screens of FIG. 23a in accordance with the present invention.

FIG. 23c is a diagram of two illustrative display screens that are based on the illustrative display screens of FIG. 23a in accordance with the present invention.

FIG. 24 is a flow chart of illustrative steps involved in displaying blocked programs using a bypass feature in accordance with the present invention.

FIG. 25 is a diagram of an illustrative  
25 sequence of illustrative display screens that is based  
on the illustrative steps of FIG. 24 in accordance with  
the present invention.

FIG. 26a is a diagram of an illustrative lock list in accordance with the present invention.

30           FIG. 26b is a diagram of an illustrative  
sequence of illustrative display screens that is based  
on the illustrative lock list of FIG. 26a in accordance  
with the present invention.

FIG. 26c is a diagram of an illustrative sequence of illustrative display screens that is based on the illustrative lock list of FIG. 26a in accordance with the present invention.

5           FIG. 27 is a diagram of an illustrative sequence of illustrative display screens involved in removing a lock bypass feature in accordance with the present invention.

10           FIG. 28 is a flow chart of illustrative steps involved in controlling purchasing in accordance with the present invention.

15           FIG. 29 is a diagram of an illustrative sequence of illustrative display screens that is based on the illustrative steps of FIG. 28 in accordance with the present invention.

20           FIGS. 30a, 30b, 30c, and 30d are each a diagram of an illustrative sequence of illustrative display screens that is based on the illustrative steps of FIG. 28 in accordance with the present invention.

25           FIG. 31 is a flow chart of illustrative steps involved in tracking user purchases in accordance with the present invention.

30           FIG. 32a is a diagram of an illustrative sequence of illustrative display screens that is based on the illustrative steps of FIG. 31 in accordance with the present invention.

            FIG. 32b is a diagram of an illustrative cable service billing statement in accordance with the present invention.

            FIG. 32c is a diagram of an illustrative credit card statement in accordance with the present invention.

FIG. 33 is a flow chart of illustrative steps involved in tracking user-accessed programming in accordance with the present invention.

FIG. 34 is a diagram of an illustrative  
5 sequence of illustrative display screens that is based on the illustrative steps of FIG. 33 in accordance with the present invention.

FIG. 35 is a flowchart of illustrative steps involved in displaying targeted advertising in  
10 accordance with the present invention.

FIG. 36 is a diagram of an illustrative sequence of illustrative display screens that is based on the illustrative steps of FIG. 35 in accordance with the present invention.

15 FIGS. 37a, 37b, 37c, 37d, and 37e are each diagrams of an illustrative display screen for single account control in accordance with the present invention.

#### Detailed Description of the Preferred Embodiments

20 An illustrative interactive television program guide system 50 in accordance with the present invention is shown in FIG. 1a. Main facility 52 includes a program guide database 54 for storing program guide information (e.g., television program  
25 listings data, program-related information, service listings data, service-related information, pay-per-view ordering information, television program promotional information, etc.).

30 Main facility 52 preferably includes a processor to handle information distribution tasks. Information from database 54 may be transmitted in parallel via communications links such as

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are separate or at least partly separate from communication paths 60. If desired, these other distribution facilities may use communication techniques (e.g., techniques for communicating with user television equipment) that are independent of techniques for distributing television signals (e.g., a paging network communications, Internet communications, etc.).

Television distribution facility 56 or other distribution facility may distribute program guide information received from main facility 52 to user television equipment 58 via communications paths 60. User television equipment 58 may be any suitable equipment for providing television that contains sufficient processing capabilities to monitor viewing activities, analyze these activities, and display appropriate program listings information for the user.

Communications paths 60 may be cable links, fiber optic links, satellite links, broadcast links, or other suitable link, or a combination of such links. Any suitable analog, digital, or analog and digital communications scheme may be used to transmit data over paths 60, including in-band transmissions, out-of-band transmissions, digital transmissions, analog transmissions, cable transmissions, satellite transmissions, over-the-air transmissions, multichannel multipoint distribution services (MMDS) transmissions, etc.

Communications paths 60 preferably have sufficient bandwidth to allow television distribution facility 56 to distribute television programming, program listings information, advertisements, and other information to user television equipment 58. Multiple

television and audio channels (analog, digital, or both analog and digital) may be provided to user television equipment 58 via communication paths 60.

The data distribution technique that is used to distribute data on paths 60 may depend on the type of information that is being distributed. For example, text and graphics may be distributed over an out-of-band channel using an out-of-band modulator or distributed in the vertical blanking interval lines of an analog video channel. Video information may also be distributed in this way, although large quantities of video information may be more efficiently distributed using one or more digital channels or streams on paths 60. Such digital channels or streams may also be used for distributing text and graphics.

Each user television equipment device 58 has a receiver which is typically a set-top box such as set-top box 62. The receiver may also be other suitable television equipment such as an advanced television receiver into which circuitry similar to set-top-box circuitry has been integrated or a personal computer television (PC/TV). For illustrative purposes, the present invention will be described primarily in the context of user television equipment 58 that uses set-top boxes.

Each set-top box 62 is typically connected to an optional videocassette recorder 66 or other recording device so that selected television programs may be recorded. Videocassette recorder 66 is typically connected to television 68. To record a program, set-top box 62 tunes to a particular channel and sends control signals to videocassette recorder 66 (e.g., using infrared transmitter 70) that instructs





television distribution facility 56 over communications paths 60. If desired, such data may be transmitted over telephone lines or other separate communications paths. If features such as these are provided using facilities separate from television distribution facility 56, some of the communications involving user television equipment 58 may be made directly with the separate facility.

If desired, an interactive television program guide system may be implemented using a data-relay architecture. In such an architecture, television distribution facility 56 may serve as a data relay site and user television equipment 58 may be a data destination site. For example, as television distribution facility 56 receives information from main facility 52, television distribution facility 56 may then continuously or periodically distribute the information to user television equipment 58. In a data-relay architecture, a program guide implemented on user television equipment 58 may use a database (e.g., database 64) for storing program guide information at user television equipment. Program guide information may include program listings and program attributes. Program attributes may be information such as program title, program actors, program duration, program genre (e.g., sports, comedy, movies, etc.), program channel, scheduled program duration, program rating (e.g., TV-G, PG-13, etc.), program content rating (or critics' rating or star rating, e.g., one star, two stars, etc.), and other related parameters that can be tagged to a program. Television distribution facility 56 may also poll set-top boxes periodically for certain information (e.g., pay program account information or

information regarding programs that have been purchased and viewed using locally-generated authorization techniques).

The features of the present invention may be implemented in a client-server arrangement or in a combination client-server and data-relay arrangement. In such arrangements, the server (e.g., television distribution facility 56) may include a database that may include program listings information.

For clarity, the present invention is sometimes described primarily in the context of program guides that are implemented on user television equipment rather than in the context of program guides that are implemented partially on a server and partially on user television equipment or a more fully server-based architecture.

Each set-top box 62 preferably contains a processor to handle tasks associated with implementing an application on the set-top box 62 that assists in parental control of television programming. For example, a stand-alone application may be provided that supports parental control features, as described more fully below. If desired, these tasks may be implemented using a program guide application. For clarity, the present invention will be described primarily in the context of such a program guide application and in the context of a program guide system.

As shown in FIG. 1b, user television equipment may include a digital video recorder 90 that may receive control signals, video signals, or both from a set-top box (e.g., set-top box 62 of FIG. 1a). Digital video recorder 90 may receive control signals

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5 programming. The stored programming may be played by  
digital video recorder 90 and displayed on television  
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Parental control setup display screen 100 includes an option for switching between single account or multi-account control. If desired, single account control or multi-account control may be automatically selected based on how many user accounts have been setup. From parental control setup display screen 100, a user may activate or deactivate parental control of programming 112 or purchasing 114. If desired, activation of parent control of programming or purchasing may be controlled automatically based on

whether a program control code or a purchase control code has been set. Parental control setup display screen 100 may further include change your codes option 110.

5                   A change your codes option may provide a user with an opportunity to change the parental control codes. For example, illustrative new codes display screen 116 of FIG. 3 may be displayed when a user selects change your codes option 118 from illustrative  
10 parental control setup display screen 120. New codes display screen 116 may provide a user with an opportunity to enter a new program control code, a new purchase control code, or both. A user may enter a sequence of alphanumeric characters for each code and  
15 may be provided with an opportunity to confirm each new code (e.g., by re-entering the code). If desired, the alphanumeric characters that are entered may be blocked from being viewed on display screen 116 to protect the secrecy of the new code. New codes display screen 116  
20 may include accept new codes option 122 which when selected causes a new program control code, purchase control code, or both to be defined in the system and an overlay 124 indicating that the codes have been updated to be displayed.

25                   A user may be provided with an opportunity to setup multiple accounts. For example, illustrative parental control setup display screen 126 of FIG. 4a may provide a user with an opportunity to select multiple account control option 128. Parental control  
30 setup display screen 126 may include add an account option 132 for adding new accounts and account listings region 130 for displaying information related to existing accounts. Account listings region 130 may

include account names, account types, etc.

Illustrative account entry display screen 134 may be displayed when a user selects add an account option 132. Account entry display screen 134 may provide a user with an opportunity to enter an account name for the new account that is being added (enter account name option 136), to assign an account type (account type option 138), and to either select to use default codes for the account (default codes option 140) or enter code(s) for the new account (code entry option 142). After making and accepting selections in account entry display screen 136, a user may be returned to the initiating parental control setup display screen 144 which now has been updated to include a listing for the added account. There may be a maximum number of accounts based on system limitations.

If desired, account listings in account listings region 146 may be selectable. A user may be allowed to position a highlight window over a particular listing and press an "OK" key of a remote control to select that listing. A display screen, such as parental control criteria display screen 145 of FIG. 4b, may be displayed to provide a user with the opportunity to view, modify, or delete the control settings for the selected account. If desired, display screen 145 may include purchase control option 143. A display screen, such as purchase control criteria display screen 131, may be displayed when the user selects purchase control option 143. Display screen 131 may provide the user an opportunity to set purchase control criteria for the selected account. Display screen 131 may include option 135 for allowing the user to access a parental control criteria display screen

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FIG. 5b having delete account option 156 may be displayed when a listing in account listing region 157 of parental control setup display screen 158 (FIG. 5a) is selected. Delete account option 156 may allow a user to delete the selected non-parent accounts (for example, the user toggles option 156 to "YES," positions a highlight region on the accept selections options, and presses a remote control key, such as an "OK" button). Account listings region 159 of illustrative parental control setup display screen 155 of FIG. 5b may be displayed without a listing for User #3 when a user selects to delete that account using delete account option 156.

Illustrative steps involved in providing multilevel parental control for use in an interactive program guide system, such as system 50 of FIG. 1a, are shown in FIG. 6. At step 160, a user may be provided with an opportunity to activate a parental control feature. At step 162, a user may be provided with an opportunity to select between single account control and multiple account control. If desired, the selection of single or multiple account control may be made automatically. At step 164, a user may be provided with an opportunity to create multiple accounts when a user selects multiple account control. Step 164 may include providing the user with an opportunity to indicate which one of the multiple accounts is a parent account. At step 166, a user may be provided with an opportunity to set a parental control criteria for each non-parent account. When a user selects single account control, a user may be provided with an opportunity to set parental control criteria for that single account at step 168. If





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For some program attributes, such as program titles, other techniques may be used to enter an attribute value to lock. For example, as shown in parental control criteria display screen 174, a user  
5 may be provided with an opportunity to enter the title of a program using alphanumeric character entry (e.g., using a keyboard).

If desired, a parental control criteria display screen may include an option for adding a title  
10 lock. For example, illustrative parental control criteria display screen 178 of FIG. 8b may include add a title lock option 180. Illustrative title search display screen 182 may be displayed when add a title  
15 lock option 180 is selected. Title search display screen 182 may provide a user with an opportunity to search for programs using the first three letters of the program title. Examples of systems with program title searching are described in U.S. patent 5,629,733 and Knudson et al. U.S. patent application Serial  
20 No. 09/357,941, filed July 16, 1999, which are hereby incorporated by reference herein in their entireties. A user may add a title to a list of locked titles by selecting a program title that was found in a program title search (e.g., by positioning a highlight window  
25 on the program title "Frazier" and pressing a lock or data entry key). The program guide may then display parental control criteria display screen 184 with a newly added title (e.g., "Frazier") highlighted.

Illustrative steps involved in setting  
30 parental control criteria without the use of subscreens for an interactive program guide system, such as system 50 of FIG. 1a, are shown in FIG. 9. At step 194, the program guide may display a parental control criteria

display screen that includes a list of attribute categories and provides a user with an opportunity to navigate between attribute categories. At step 196, a user may be provided with an opportunity to indicate an interest in a value for an attribute category. At substep 196a, a locked status indicator may be displayed for an attribute value that has already been locked. At step 198, a user may be provided with an opportunity to change the lock setting of attribute values. At step 200, a user may be provided with an opportunity to select one or more accounts. If desired, step 200 may be provided when the user has completed making desired changes to the lock settings. At step 202, a user may be provided with an opportunity to apply the changes to the accounts that have been selected when the opportunity to select accounts was provided.

Illustrative display screens 204, 206, 208, 210, and 212 of FIGS. 10a and 10b may be provided based on the illustrative steps shown in FIG. 9.

Illustrative parental program control code display screen 204 may be displayed when a user selects a parental program control option. Illustrative parental control criteria display screen 206 may be displayed when a user enters a valid parent program code.

Parental control criteria display screen 206 may include a list of attribute categories and attribute values. A user may be allowed to move a highlight region between attribute category and to move between the range of attribute values that are available for each category. Parental control criteria screen 206 may include lock icons to indicate whether a particular attribute value is locked in any account. The lock

icons may vary to reflect for how many of the accounts that particular attribute value is locked. A lock icon that is black in color (e.g., a black lock icon) may indicate that a particular attribute value has been  
5 locked for all of the accounts. A lock icon that is in a different color (e.g., a grey lock icon) may indicate that a particular attribute value has been locked for at least one account but not for all of the accounts. Illustrative parental control criteria display screen  
10 208 may be displayed when a user navigates in parental control criteria display screen 206 to the channel category, navigates to Channel #30 (HBO), and presses a lock or data entry key to change the setting for Channel #30 (HBO) from no locked accounts to all  
15 accounts being locked. Parental control criteria display screen 208 includes a lock icon that is associated with Channel #30 (HBO) to indicate the new lock status for Channel #30. Parental control criteria display screen 20b includes a grey lock icon for the  
20 PG-13 attribute. The setting for PG-13 may be changed to be either locked for all accounts (e.g., black icon) or locked for none of the accounts (e.g., no icon). To change the setting for an attribute value that has a grey lock icon, the user may, for example, use a data  
25 entry or lock key to change the setting to all accounts locked, change the setting to no accounts locked, or to return the setting to its original grey lock setting unchanged.

Illustrative select account display screen  
30 210 of FIG. 10b may be displayed when a user selects apply option 212 of parental control criteria display screen 208. Select account display screen 210 includes a list of accounts with an option for each account that

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provides the user with an opportunity to select the accounts to which the changes in the lock settings (e.g., locking Channel #30) should be applied.

Illustrative steps involved in setting  
5 parental control criteria by first selecting accounts for use in an interactive program guide system, such as system 50 of FIG. 1a, are shown in FIG. 11. At step 214, a user may be provided with an opportunity to select one or more accounts. At step 216, a parental  
10 control criteria display screen having a list of attribute categories and attribute values may be displayed when a user selects one or more accounts. At step 218, a user may be provided with an opportunity to indicate an interest in a value for an attribute  
15 category. At substep 218a, a lock status indicator may be displayed for attribute values that are locked for the selected accounts. At step 220, a user may be provided with an opportunity to change the lock setting of a selected value. At step 222, a user may be  
20 provided with an opportunity to apply the change in lock setting to the earlier selected accounts.

Illustrative display screens 224, 226, and 228 of FIG. 12 may be provided based on the illustrative steps of FIG. 11. Illustrative select  
25 account display screen 224 may be displayed when a user selects a parental control option and enters a parent program code. Illustrative parental control criteria display screen 226 may be displayed when a user selects one or more accounts using options that are provided in  
30 select account display screen 224. A user may be allowed to change lock settings for attribute values while parental control criteria display screen 226 is displayed. Lock icons that are displayed in parental

control criteria display screen 226 may indicate whether a particular attribute value is locked for the selected accounts. A black lock icon may indicate that a particular attribute value is locked for all of the selected accounts. A grey lock icon may indicate that a particular attribute value is locked for at least one account but not for all of the selected accounts. Parental control criteria display screen 226 includes a grey lock icon for the PG attribute value. A user may navigate to the PG value and press a data entry or lock key to change the setting to be locked for all selected accounts (e.g., a black lock icon). Pressing the key again may change the setting of the PG value to be unlocked for all of the selected again. A user may then press the key again to return the setting to its original setting. Changes to the lock setting may be applied to the selected accounts when a user selects apply changes option 230. If desired, the changes may be applied when the user changes the setting for each attribute value.

Other icon shapes, colors or status indicators may also be used to reflect lock settings. Other techniques for changing the lock settings may also be used. For example, a display screen may include the name of each account that is locked for a particular attribute value next to where that attribute value is displayed on the screen.

Illustrative steps involved in setting parental control criteria by example for use in an interactive program guide system, such as system 50 of FIG. 1a, are shown in FIG. 13. At step 232, a user may be provided with an opportunity to indicate an interest in a program (e.g., by selecting a program listing, by

pressing a lock key when a program is displayed, by selecting a parental control option from a program information display screen, etc.). At step 234, a display screen may be displayed that includes a list of attribute categories and values for the program of interest. At substep 234a, lock status indicators may be displayed for the attribute values in the list that are locked for any account. At step 236, a user may be provided with an opportunity to change lock settings for the attribute values. If desired, a user may select to which accounts the changes are to be applied by using parental control criteria display subscreens or using an account select display screen before or after changes in lock settings are made.

Illustrative program listings display screen 238 and illustrative parental control criteria display screens 240 and 242 of FIG. 14 may be provided based on the illustrative steps shown in FIG. 13. Parental control criteria display screen 240 may be displayed when a user selects a program listing (e.g., "Simpsons") from program listings display screen 238 and enters a parent program code. Parental control criteria display screen 240 may provide a user with an opportunity to navigate between subscreens where each subscreen is for a different account and includes a list of program attribute categories and the attribute category values for the selected program. If desired, the attribute values may be fixed so that a user may not be allowed to navigate to other attribute values for a category. Parental control criteria display screen 242 may be displayed with a lock icon being shown for the TV-PG television rating when a user selects to lock the TV-PG television rating in parental

control criteria display screen 248. The change in lock setting is applied to the account that is associated with the current subscreen (e.g., the account for Jane).

- 5                    Illustrative information display screen 244, illustrative select account display screen 246, and illustrative parental control criteria display screen 248 of FIG. 15 may be displayed based on the illustrative steps of FIG. 13. Program information
- 10 display screen 244 may have been displayed to provide information and options that are related to a particular program. Select account display screen 246 may be displayed when a user selects parental lock option 250 of program information display screen 244.
- 15 The lock settings for accounts that are selected using account select display screen 246 may be changed using parental control criteria display screen 248. Parental control criteria display screen 248 includes a list of attribute categories and values for the program that
- 20 was associated with program information display screen 244. Parental control criteria display screen 248 may allow the user to change the lock setting for attribute values and to apply the changes to the selected accounts.
- 25                    Illustrative program display screen 252 and illustrative parental control criteria display screens 254 and 256 of FIG. 16 may be displayed based on the illustrative steps of FIG. 13. Parental control
- 30 criteria display screen 254 for locking attributes of a particular program (e.g., "Apocalypse Now") may be displayed when a user enters a valid parental program code after pressing a lock key while video for that particular program was being displayed. A user may

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authorized user may simply enter a code to show that the user is present without requiring users to log in to the system.

Illustrative display screens 274 and 276 of FIG. 19b may be provided based on illustrative lock list 272 of FIG. 19a. Display screen 274 may include a block for an NC-17 movie that has been tuned and may include prompts for the entry of a valid program control code by an authorized user. Video of the NC-17 movie is displayed when Tom, who is an authorized user, enters his code. But, as shown in FIGS. 19c and 19d, Tom, who is not in the list of authorized accounts for X-rated movies, is not prompted and the two parent accounts are prompted for the entry of a program control code to remove the block on an X-rated movie that has been tuned.

Illustrative display screens of FIGS. 20b, 20c and 20d may be provided based on illustrative lock list 278 of FIG. 20a. FIG. 20a shows that attribute locks may have been set for different values in the same attribute category (e.g., PG-13 and R-rated movies are on the list of locks). Different users may be authorized to view programming having different attribute values in the same category. In FIG. 20b, a parent enters a code to remove a block on an R-rated movie, but when the channel is then changed to display a lower rated movie, a PG-13 movie, the program guide may block the video and audio of the program because the new program has an attribute that matches an attribute that is in the lock list 278.

In FIG. 20c, a user may have tuned to a particular channel (e.g., channel #50) to view the movie ("Apocalypse Now." The movie which has an

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attribute that is on lock list 278, may be displayed when an authorized user enters a valid program control code. When a user changes the channel to another showing of "Apocalypse Now," the program is again  
5 blocked and user code entry is again forced. When the user turns back to that particular channel (e.g., channel #50) to return to viewing that showing of "Apocalypse Now," the program may be blocked again and authorized code entry may be required.

10 Lock list 278 of FIG. 20a shows that there is a lock for programs with the title "Seinfeld." In FIG. 20d, a user (the parent) enters a program control code using display overlay 280 to remove a block on an episode of "Seinfeld." The user (the parent) is then  
15 again forced to enter a code when the user changes the channel to another channel that is also showing an episode of "Seinfeld." The user is then again forced to enter a code to view a program when the user returns back to the first Seinfeld episode that the user had  
20 tuned.

Illustrative display screens of FIGS. 21a, 21b, and 21c may be provided based on the illustrative lock list of FIG. 20a. Video of a PG-13-rated movie may be displayed in display screen 282 when the program  
25 control code for Tom is entered in overlay 284. Video for a subsequent R-rated movie may be displayed without forcing another login because the account for Tom is also listed in lock list 278 as an authorized user for R-rated movies.

30 If desired, as shown in FIG. 21b, video for the subsequent R-rated movie may be blocked to require Tom or another user to enter a code (again) to have the block removed.

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In FIG. 21c, the program control code for Karen is entered to allow video for a PG-13-rated movie to be displayed. When an R-rated movie subsequently begins, the program guide may block the R-rated movie and force a code entry by an authorized user because Karen who is an authorized user for viewing a PG-13 movie is not an authorized user for viewing an R-rated movie.

Illustrative display screens of FIG. 22b may be provided based on illustrative lock list 286 of FIG. 22a. Lock list 286 may include a lock for Channel #50 with Tom and parent as authorized users and a lock for R-rated movies with Karen and parent as authorized users. In FIG. 22b, video of a program on channel #50 may be displayed when the program control code for Tom is entered. Code entry to view Channel #50 may allow a user to view all the programming including R-rated movies, that are on Channel #50 while Channel #50 is continuously tuned. If desired, however, the R-rated movie on Channel #50 may be blocked even if the user has not changed the channel in the interim between code entry and the beginning of the R-rated movie. Overlay 288 may block video of an R-rated movie when the user tunes to another channel.

In operation, when a parent locks a rating, the guide may lock all programs that match that rating exactly (e.g., lock PG movies). If desired, the guide may lock all programs that match that rating or higher (e.g., lock PG and higher rated movies).

In FIG. 23a, parental control criteria display subscreen 300 indicates that there is a lock on PG-rated movies for Mike. In subscreen 302, the user may navigate to the movie rating category and may

remove a lock on R-rated movies for Mike. The display screens of FIGS. 23b and 23c may be provided based on the display screens of FIG. 23a. In FIG. 23b, the program guide may block video of a PG-rated movie since  
5 there is an active lock on PG-rated movies for Mike, while the guide may allow video of an R-rated movie since the lock on R-rated movies for Mike has been removed and there are no other active locks on R-rated movies. If desired, as shown in FIG. 23c, video of the  
10 PG-rated and the R-rated movies may be displayed because removing the R-rated lock may have also removed the locks on lower movie ratings and there may have been no other active locks on PG-rated movies.

Illustrative steps involved in displaying  
15 blocked programs with a bypass for locked attribute values for use in an interactive program guide system, such as system 50 of FIG. 1a, are shown in FIG. 24. At step 304, the program guide may block programs that have an attribute value that matches a locked attribute  
20 value for at least one account. At step 306, a user may be provided with an opportunity to bypass locks. At step 308, the program guide may display blocked programs when a user selects to bypass locks.

Illustrative parental control criteria  
25 display screen 310 of FIG. 25 may include bypass locks option 312 and may be displayed when a user enters a program control code (preferably, a parent program control code) after selecting a parental lock option from an information display screen, a navigator display  
30 screen, a program video display screen, etc. The program guide may bypass all locks when a user selects bypass locks option 312. If desired, a user may be

required to enter a parent program control code when bypass locks option 312 is selected.

A user may be provided with an opportunity to turn off a bypass locks feature. The illustrative  
5 display screens of FIG. 26b and 26c may be provided based on illustrative lock list 314 of FIG. 26a. In FIG. 26b, an option that was turned on to bypass locks may be turned off when a user turns the program guide off. In FIG. 26c, an option that was turned on to  
10 bypass locks may be turned off automatically when a specified period of time elapses.

Illustrative display screen 316 of FIG. 27 may be a display screen that is related to parental control features. Display screen 316 may provide a  
15 user with an opportunity to turn off a bypass lock option. Overlay 318 may optionally be displayed to allow a parent program code to be entered to turn off the lock bypass option when a user selects to turn off the option from display screen 316.

20 Illustrative steps involved in controlling purchasing for use in an interactive program guide system, such as system 50 of FIG. 1a, are shown in FIG. 28. At step 320, more than one personal code may be associated with each account. At step 322, one code for  
25 each account may be used for access to parentally blocked programming and another code may be used for making purchases. At step 324, a user may be provided with an opportunity to set purchase limitations for each account. If desired, the opportunity to set  
30 purchase limitations for each account may be limited to users who have parent accounts. At step 326, a user who attempts to make a purchase may be provided with an opportunity to enter the purchase code that is

associated with that user's account. At step 328, the program guide may determine whether the intended purchase is within the user's purchase limitations. At step 330, the program guide may block the user from making the purchase when the program guide determines that the intended purchase is not within the user's purchase limitations. At step 332, the program guide may allow the user to make the purchase when the program guide determines that the intended purchase is within the user's purchase limitations.

Illustrative navigator display screen 334, illustrative purchase control code display screen 336, and illustrative purchase control criteria display screen 338 of FIG. 29 may be displayed based on the illustrative steps of FIG. 28. Purchase control code display screen 336 may be displayed when purchase control option 340 of navigator display screen 334 is selected. If desired, purchase control code display screen 336 may be displayed as an overlay. Purchase control criteria display screen 338 may be displayed when a valid parent code has been entered in purchase control code display screen 336. Purchase control criteria display screen 338 may provide a user with an opportunity to set purchase control criteria for each account. Purchase control criteria display screen 338 may allow a user to select which accounts (preferably which non-parent accounts) are authorized to make purchases. If desired, purchase control criteria display screen 338 may include spending limit option 340 which may provide a user with an opportunity to specify a spending limit for a specified period of time. If desired, purchase control criteria display screen 338 may include purchase type option 342 that



provides a user with an opportunity to select which types of purchases (e.g., pay-per-view, merchandise, etc.) an account holder is authorized to make.

Illustrative display screens of FIGS. 30a, 30b, 30c, and 30d may be provided based on the illustrative steps of Fig. 28. Illustrative purchase control code overlay 344 of FIG. 30a may be displayed when a user selects order option 346 of information display screen 348. Order display screen 350 may be displayed when a purchase control code for an account is entered and that account is authorized to make this purchase (i.e., the purchase control limitations on the account currently do not prohibit this purchase). In FIG. 30b, overlay 352 is displayed to indicate that an intended purchase has been blocked. Overlay 352 may be displayed when the account for the purchase code that has been entered in overlay 354 is not authorized to make this purchase due to a spending limit on that account.

Illustrative overlay 356 of FIG. 30c is displayed to indicate that an intended purchase has been blocked because the account for which a purchase control code has been entered is not authorized to make purchases of this type (e.g., to purchase a premium service). Illustrative overlay 355 of FIG. 30d is displayed to prompt users who are authorized to make a particular purchase to enter their purchase control code. A prompt for unauthorized users (e.g., Jane) is not provided.

Illustrative steps involved in tracking user purchases for use in an interactive program guide system, such as system 50 of FIG. 1a, are shown in FIG. 31. At step 357, purchasing may be controlled based on

the purchase limitations on each account. At step 359, the program guide may track purchases that are made by each account (e.g., by detecting which account purchase codes has been entered). At step 361, a list having  
5 information on purchases that have been made may be provided.

Illustrative navigator display screen 363 and illustrative purchase tracking display screen 365 of FIG. 32a may be displayed based on the illustrative  
10 steps of FIG. 31. Purchase tracking display screen 365 may be displayed when purchase tracking option 367 of navigator display screen 363 is selected. Purchase tracking display screen 365 may include a record of purchases that have been made. Display screen 365 may  
15 include (as shown) a subtotal for each account and a total for all accounts. If desired, purchase records may be displayed in sorted order and subtitled by the account whose code was entered to complete the purchase.

20 Account related purchasing information may be provided to a billing entity. For example, illustrative cable service bill 358 of FIG. 32b may have the name of the account whose purchase code was used to make purchase printed next to the name of what  
25 was purchased (e.g., HBO service - Tom). Illustrative credit card statement of a parent 360 of FIG. 32c may include the name of a purchasing account next to the product or service that was purchased using the credit card. If desired, such bills may include purchases  
30 subtotaled by account. For example, the cable bill may include a separate section of purchases that are sorted by account and subtotaled, or the credit card bill may

include a similar section of purchases sorted and subtotaled by account.

Illustrative steps involved in tracking user-accessed programming for use in an interactive program guide system, such as system 50 of FIG. 1a, are shown in FIG. 33. At step 362, the program guide may give user accounts different levels of access to programming (e.g., different levels of access based on the parental control criteria for each account). At step 364, the program guide may track user access to parentally locked programs (e.g., programs that were displayed when a user's program control code was entered). At step 366, the program guide may display a list having information that is related to each user's parentally controlled access history.

Illustrative navigator display screen 368 and illustrative access tracking display screen 370 of FIG. 34 may be displayed based on the illustrative steps of FIG. 33. Access tracking display screen 370 may be displayed when access tracking option 372 is selected. If desired, the program guide requires that a user enter a parent program control code before displaying access tracking display screen 370. Access tracking display screen 370 may include a list of parentally controlled programs that have been accessed and the name of the account whose code was used to access the program.

Illustrative steps involved in displaying targeted advertising for use in an interactive program guide system, such as system 50 of FIG. 1a, are shown in FIG. 35. At step 379, the program guide may block a program from being displayed. At step 376, authorized users may be provided with an opportunity to enter a

program control code to remove the block. At step 378, the program guide may display advertising that is targeted to the particular interests of the user whose code has been entered to remove the block.

5 Illustrative display screens of FIG. 36 may be provided based on the illustrative steps of FIG. 35. In FIG. 36, the program guide displays an advertisement that is targeted to Jane when program code for Jane's account is used to access the current program. If desired,  
10 advertising may be targeted to the user whose code was used last.

A household may choose to have only one account and not set up control criteria for multiple accounts. The system may operate using only one  
15 account when a user selects single account control option 380 of parental control setup display screen 382 of FIG. 37a or when a single account is set up using the multi-account control option. The user may select the parental program control criteria for that one  
20 account using program control criteria display screen 389 of FIG. 37b. The user may select the purchase control criteria for that account using purchase control criteria display screen 386 of FIG. 37c. FIGS. 37d and 37e show that the display of a program or  
25 the purchase of a product may be blocked based on program and purchase control criteria for the account and that an opportunity is provided for the entry of a single program control code or purchase control code to remove a block.

30 Some of the display screens that are shown in the FIGS. have included an exit option for exiting from a current display screen (e.g., back to a previous display screen) without accepting or making selections

The foregoing is merely illustrative of the  
5 principles of this invention and various modifications  
can be made by those skilled in the art without  
departing from the scope and spirit of the invention.

What is Claimed is:

1. An interactive television system having user television equipment on which an interactive television application is at least partially implemented to allow parental control of television programming viewing of users, said user television equipment, being configured to:

support multiple user accounts, each of which has a different associated personal identification code;

allow the interactive television application to be used to establish different parental control criteria for each of the multiple accounts;

block the viewing of television programming that match at least one of the parental control criteria;

allow users to view television programming that is not blocked; and

allow a given one of the users to view blocked television programming by entering a personal identification code for one of the accounts that has parental control criteria that permit the blocked television programming to be viewed.

2. The system defined in claim 1 wherein at least one account has been designated as a parent account and at least one account is designated as a child account.

3. The system defined in claim 2 wherein the parent account is without restrictions on television programming viewing.



using the interactive television application to support multiple user accounts, each of which has a different associated personal identification code;

using the interactive television application to allow users to establish different parental control criteria for each of the multiple accounts;

blocking the viewing of television programming that match at least one of the parental control criteria;

allowing users to view television programming that is not blocked; and

allowing a given one of the users to view blocked television programming by entering a personal identification code for one of the accounts that has parental control criteria that permit the blocked television programming to be viewed.

10. The method defined in claim 9 further comprising:

designating at least one account as a parent account; and

designating at least one account as a child account.

11. The method defined in claim 10 wherein the parent account is without restrictions on television programming viewing.

12. The method defined in claim 10 further comprising temporarily bypassing television programming

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13. The method defined in claim 9 further comprising targeting advertisements based on which personal identification code was most recently entered.

15. The method defined in claim 14 further comprising displaying a log of blocked television programming that was viewed on entry of one of the personal identification codes and an account name corresponding to the respective code that was entered to view the programming.

17. An interactive television system having user television equipment on which an interactive television application is at least partially implemented to allow parental control of purchasing through the user television equipment, said user television equipment, being configured to:

support multiple user accounts, each of which has a different associated personal identification code;

allow users to make purchases that are not blocked; and

18. The system defined in claim 17 wherein at least one account is designated as a parent account and at least one account is designated as a child account.

20. The system defined in claim 18 wherein the user television equipment is configured to temporarily bypass purchases from being blocked on entry of the personal identification code for the parent account.

21. The system defined in claim 17 wherein advertisements are targeted based on which personal identification code was most recently entered.

22. The system defined in claim 17 wherein the user television equipment is configured to track blocked purchases that were made based on the personal identification code that was entered to make the purchases.

23. The system defined in claim 22 wherein the user television equipment is configured to display a log of blocked purchases that were made and an account name corresponding to the respective code that was used to make the blocked purchase.

24. The system defined in claim 17 wherein the interactive television application is an interactive television program guide application.

25. A method for use in an interactive television system having user television equipment on which an interactive television application is at least partially implemented to allow parental control of purchasing through the user television equipment, comprising:

using the interactive television application to support multiple user accounts, each of which has a different associated personal identification code;

using the interactive television application to allow users to establish different purchase control criteria for each of the multiple accounts;

blocking purchases from being made based on the purchase control criteria;

allowing a given one of the users to make purchases that have been blocked by entering a personal identification code for one of the accounts that has purchase control criteria that permit completion of the block purchases.

designating at least one account as a parent account; and

27. The method defined in claim 26 wherein the parent account is without restrictions on making purchases.

29. The method defined in claim 25 further comprising targeting advertisements based on which personal identification code was most recently entered.

30. The method defined in claim 25 further comprising tracking blocked purchases that were made based on the personal identification code that was entered to make the purchases.

32. The method defined in claim 25 wherein the interactive television application is an interactive television program guide application.



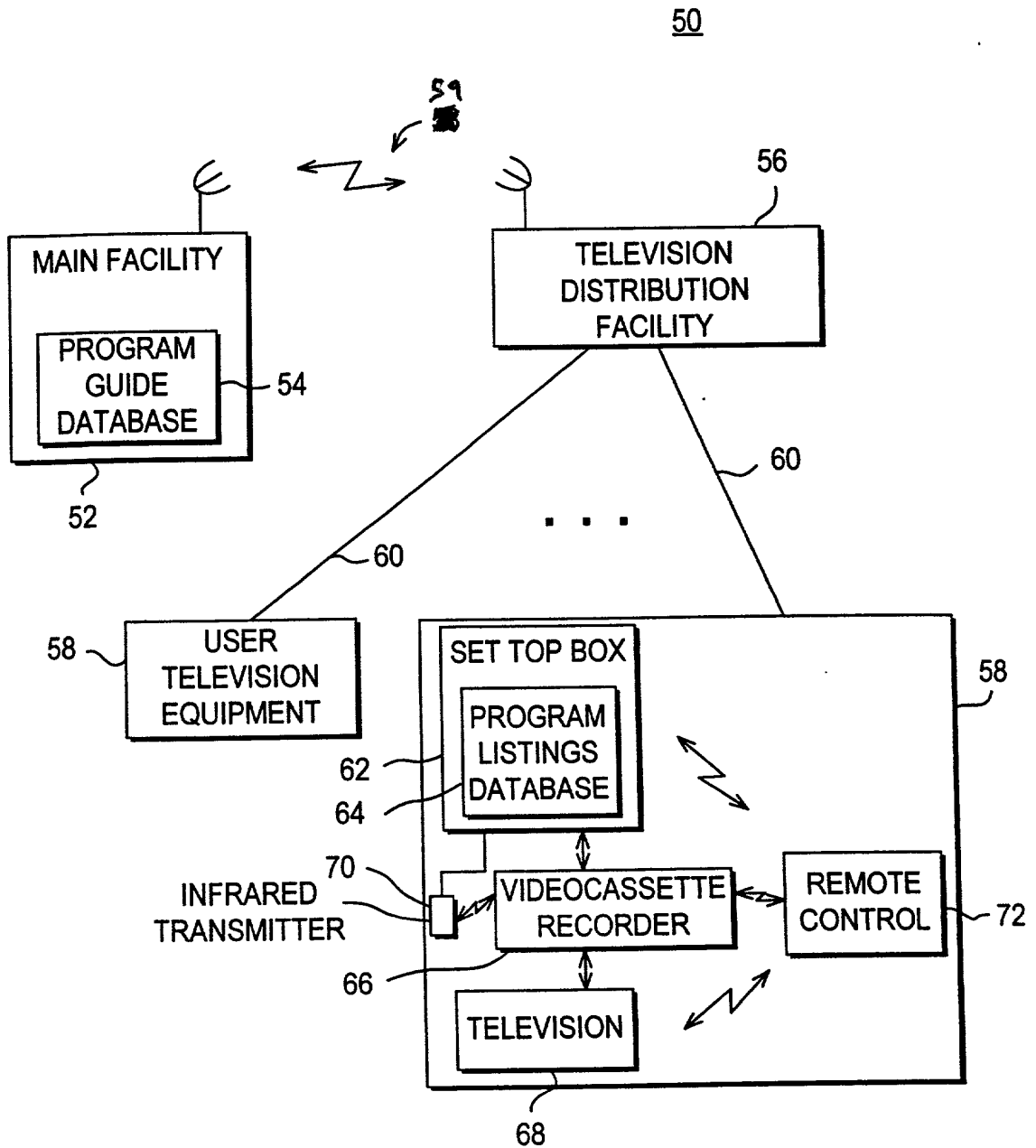


FIG. 1a

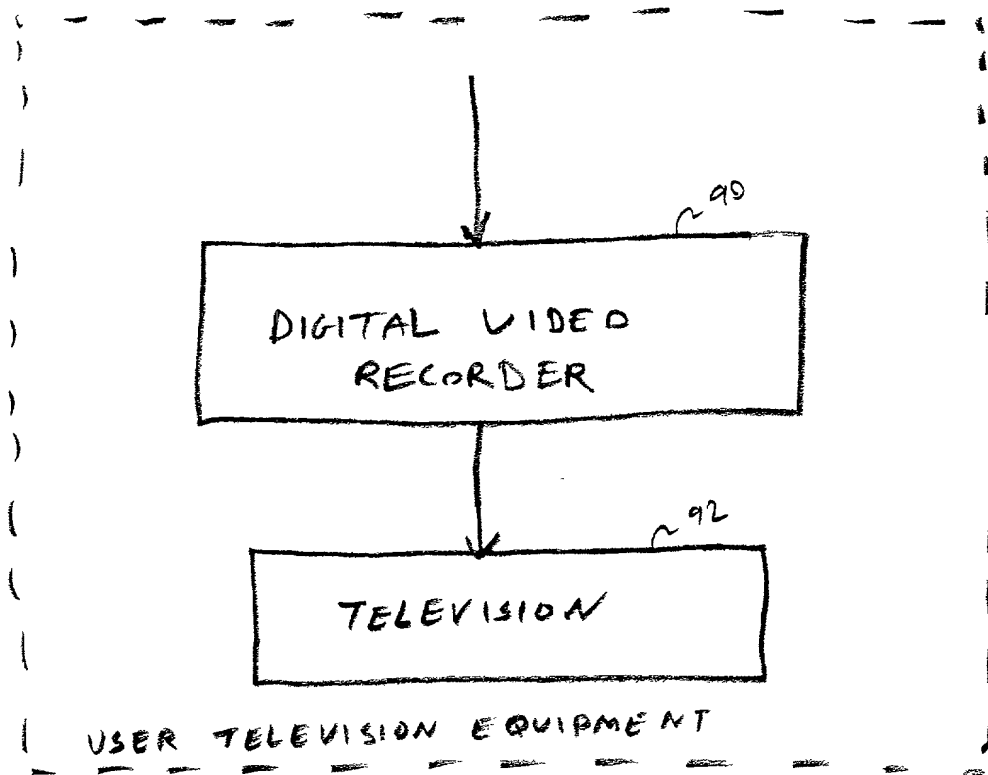
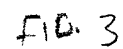


FIG. 1b

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### PARENTAL CONTROL SETUP <sup>128</sup>

SINGLE ACCOUNT CONTROL
MULTI-ACCOUNT CONTROL

PROGRAM LOCKING CONTROL

PURCHASE CONTROL

CHANGE YOUR CODES

ON ☐ OFF ☐

ON ☐ OFF ☐

ACCOUNTS	TYPE
TOM	PARENT
KELLY	PARENT
TOMMY	NON-PARENT
JANE	NON-PARENT

ADD AN ACCOUNT
ACCEPT SELECTIONS
EXIT

USER  
SELECTS  
ADD AN  
ACCOUNT  
OPTION

### ENTER ACCOUNT NAME <sup>136</sup>

PARENT ACCOUNT
NONPARENT ACCOUNT

USE DEFAULT CODES

ENTER PROGRAM CONTROL CODE

ENTER PURCHASE CONTROL CODE

YES ☐ NO ☐

REPEAT

REPEAT

XXXX

XXXX

XXXX

XXXX

ACCEPT SELECTIONS MADE
EXIT

USER MAKES  
SELECTIONS

### PARENTAL CONTROL SETUP <sup>144</sup>

SINGLE ACCOUNT CONTROL
MULTI-ACCOUNT CONTROL

PROGRAM LOCKING CONTROL

PURCHASE CONTROL

CHANGE YOUR CODES

ON ☐ OFF ☐

ON ☐ OFF ☐

ACCOUNTS	TYPE
TOM	PARENT
KELLY	PARENT
TOMMY	NON-PARENT
JANE	NON-PARENT
KAREN	NON-PARENT

ADD AN ACCOUNT
ACCEPT SELECTIONS
EXIT

FIG. 4a

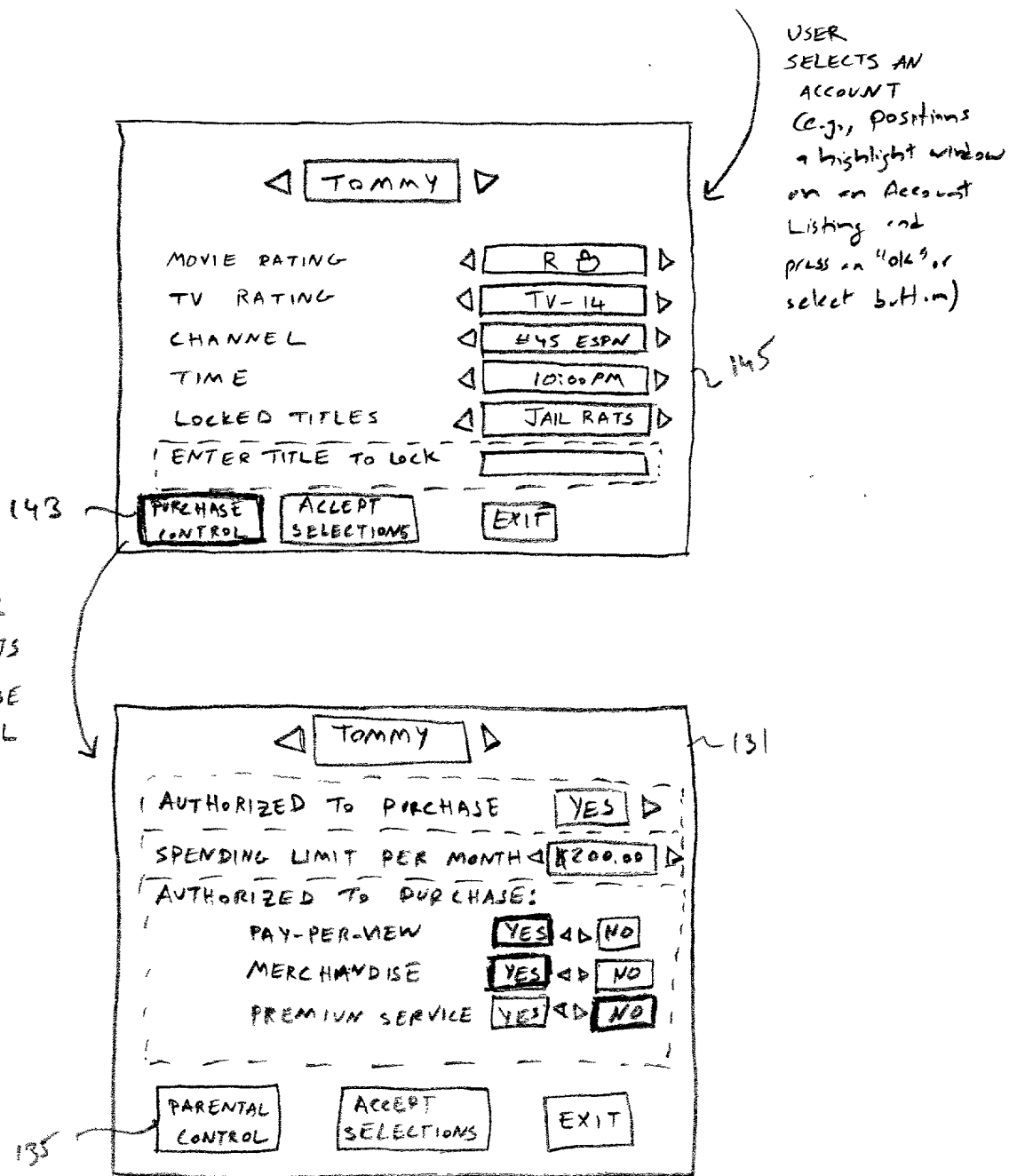


FIG 4b

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### PARENTAL CONTROL SETUP

SINGLE ACCOUNT CONTROL <>
MULTI-ACCOUNT CONTROL

PROGRAM LOCKING CONTROL  
 PURCHASE CONTROL  
 CHANGE YOUR CODES

ON <> OFF  
 ON <> OFF

ACCOUNTS  
 USER #1  
 USER #2  
 USER #3

TYPE  
 PARENTAL  
 NON-PARENTAL  
 NON-PARENTAL

ADD AN ACCOUNT
ACCEPT SELECTIONS
EXIT

USER SELECTS  
ADD  
AN ACCOUNT  
OPTION

### ADD ACCOUNT - USER #4

USE DEFAULT CODES  
 PARENT ACCOUNT  
 PROGRAM CONTROL CODE  
 XXXX  
 PURCHASE CONTROL CODE  
 XXXX

YES <> NO  
 YES <> NO  
 YES <> NO  
 Repet  
 XXXX  
 Repet  
 XXXX

ACCEPT SELECTIONS
EXIT

USER SELECTS  
TO ADD  
USER #4  
AND TO  
ADD  
USER #4

### PARENTAL CONTROL SETUP

SINGLE ACCOUNT CONTROL <>
MULTI-ACCOUNT CONTROL

PROGRAM LOCKING CONTROL  
 PURCHASE CONTROL  
 CHANGE YOUR CODES

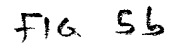
ON <> OFF  
 ON <> OFF

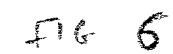
ACCOUNTS  
 USER #1  
 USER #3  
 USER #4

TYPE  
 PARENT  
 NON-PARENT  
 NON-PARENT

ADD AN ACCOUNT
ACCEPT SELECTIONS
EXIT

Fig. 5a





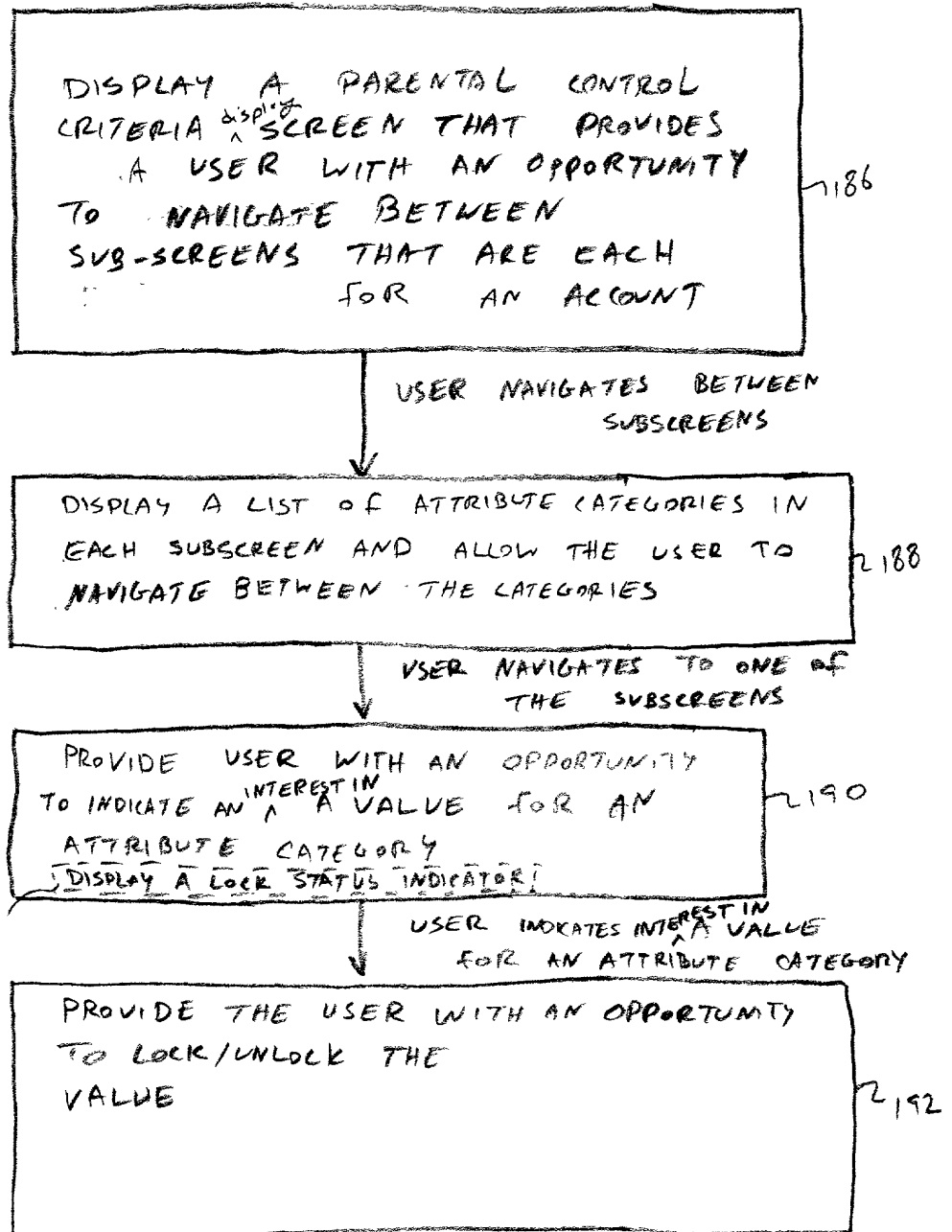


Fig. 7



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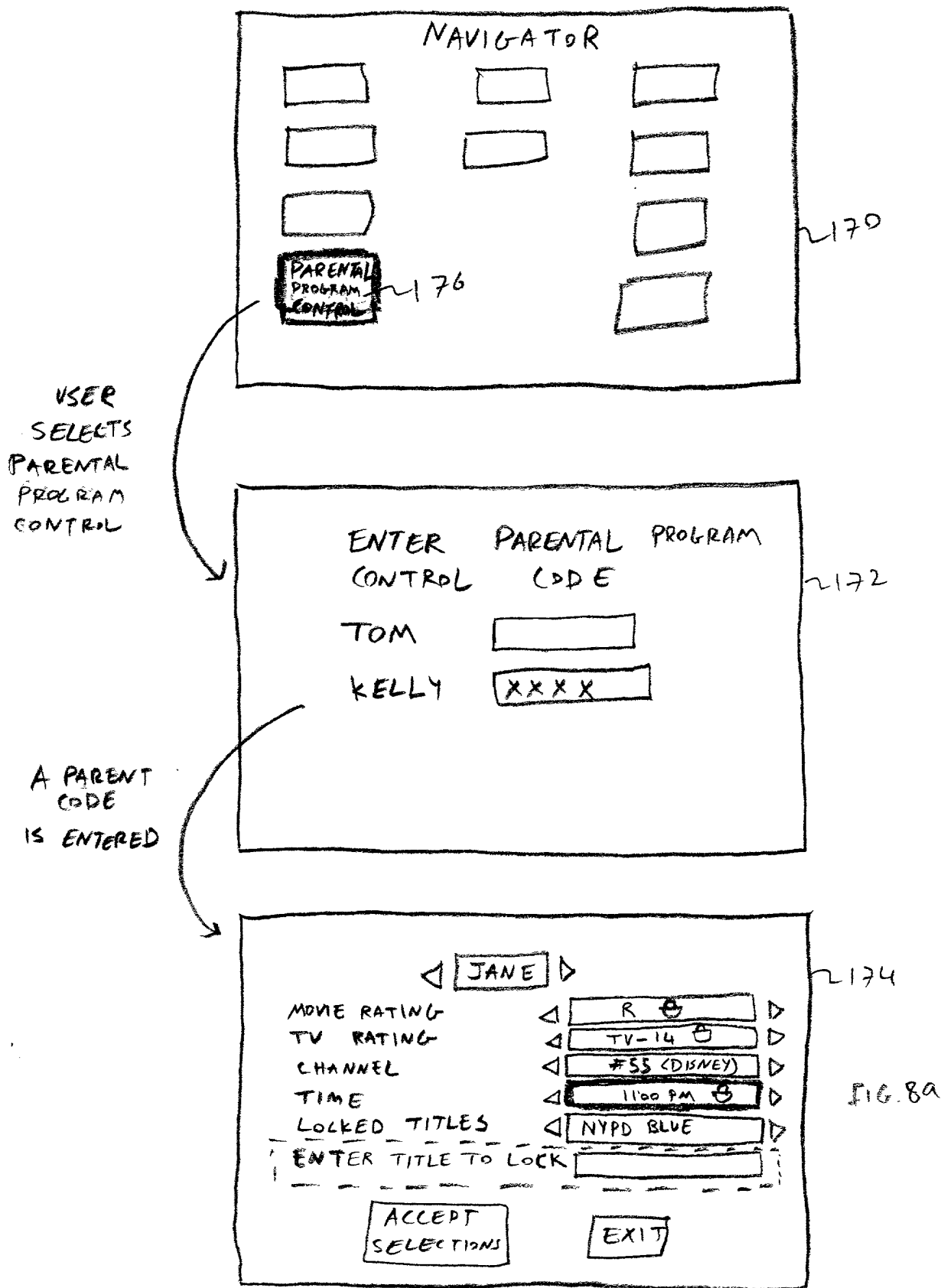


FIG. 8a

◀ JANE ▶

MOVIE RATING ▶ R ◀

TV RATING ▶ TV-14 ◀

CHANNEL ▶ #55 (DISNEY) ▶

TIME ▶ 11:00 PM ◀

LOCKED TITLES ▶ NYPD BLUE ▶

ADD A TITLE LOCK

ACCEPT SELECTIONS EXIT

USER  
SELECTS  
ADD A TITLE  
Lock option

TITLE SEARCH  
DISPLAY SCREEN

ENTER FIRST THREE LETTERS

F R A

FRANCE TODAY

FRANKS & BEANS

FRAZIER

USER  
SEARCHES  
and  
SELECTS  
FRAZIER

◀ JANE ▶

MOVIE RATING ▶ R ◀

TV RATING ▶ TV-14 ◀

CHANNEL ▶ #55 (DISNEY) ▶

TIME ▶ 11:00 PM ◀

LOCKED TITLES ▶ FRAZIER ▶

ADD A TITLE LOCK

ACCEPT SELECTIONS EXIT

FIG 8b

006080" 965555960

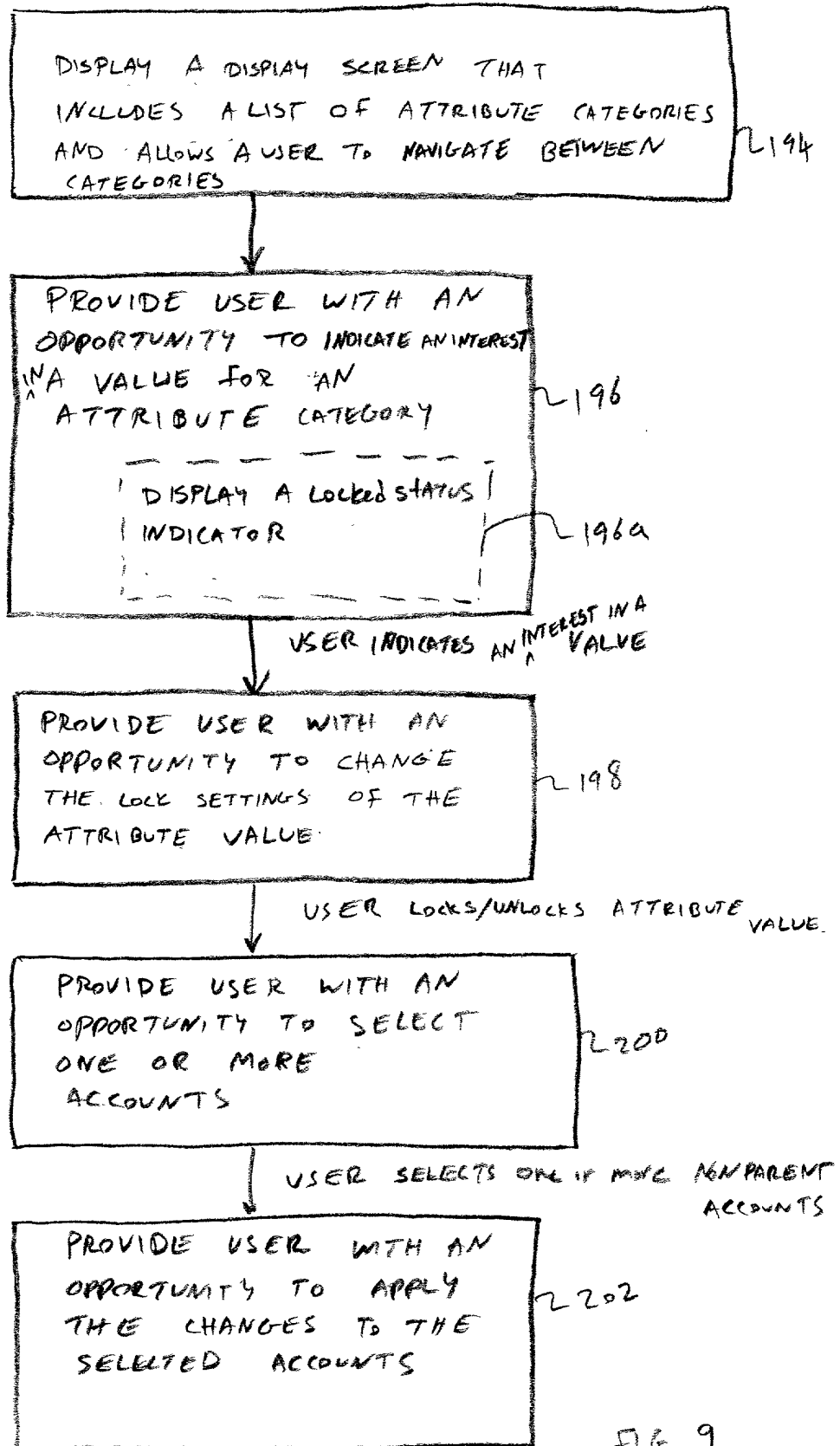


FIG 9

ENTER PARENTAL  
CONTROL CODE

USER #1 XXXXXX

MOVIE RATING PG-8

TV RATING TV-6

CHANNEL #30 CH60

TIME 7:00 AM

LOCKED TITLES DALLAS

ADD A TITLE LOCK

APPLY

MOVIE RATING PG

TV RATING TV-G

CHANNEL #30 (HBO)

TIME 7:00 AM

LOCKED TITLES DALLAS

ADD A TITLE LOCK

APPLY

USER  
SELECTS  
APPLY  
OPTION

Лб. 109

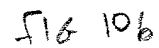




FIG. 11

WHICH ACCOUNTS ARE YOU  
INTERESTED IN CHANGING?

USER #2 ☐ NO

USER #3 ☒ YES

USER #4 ☐ NO

```
graph TD
    MOVIE_RATING[MOVIE RATING] --> PG[PG]
    TV_RATING[TV RATING] --> TV_G[TV-G]
    CHANNEL[CHANNEL] --> H30["#30 (HBO)"]
    TIME[TIME] --> 1000["10:00 PM"]
    LOCKED_TITLES[LOCKED TITLES] --> HOMICIDE[HOMICIDE]
    ADD_A_TITLE_LOCK[ADD A TITLE LOCK]
    APPLY_CHANGES[APPLY CHANGES TO SELECTED ACCOUNTS]
```

MOVIE RATING

TV RATING

CHANNEL

TIME

LOCKED TITLES

PG

TV-G

#30 CHBO

10:00 PM

HOMICIDE

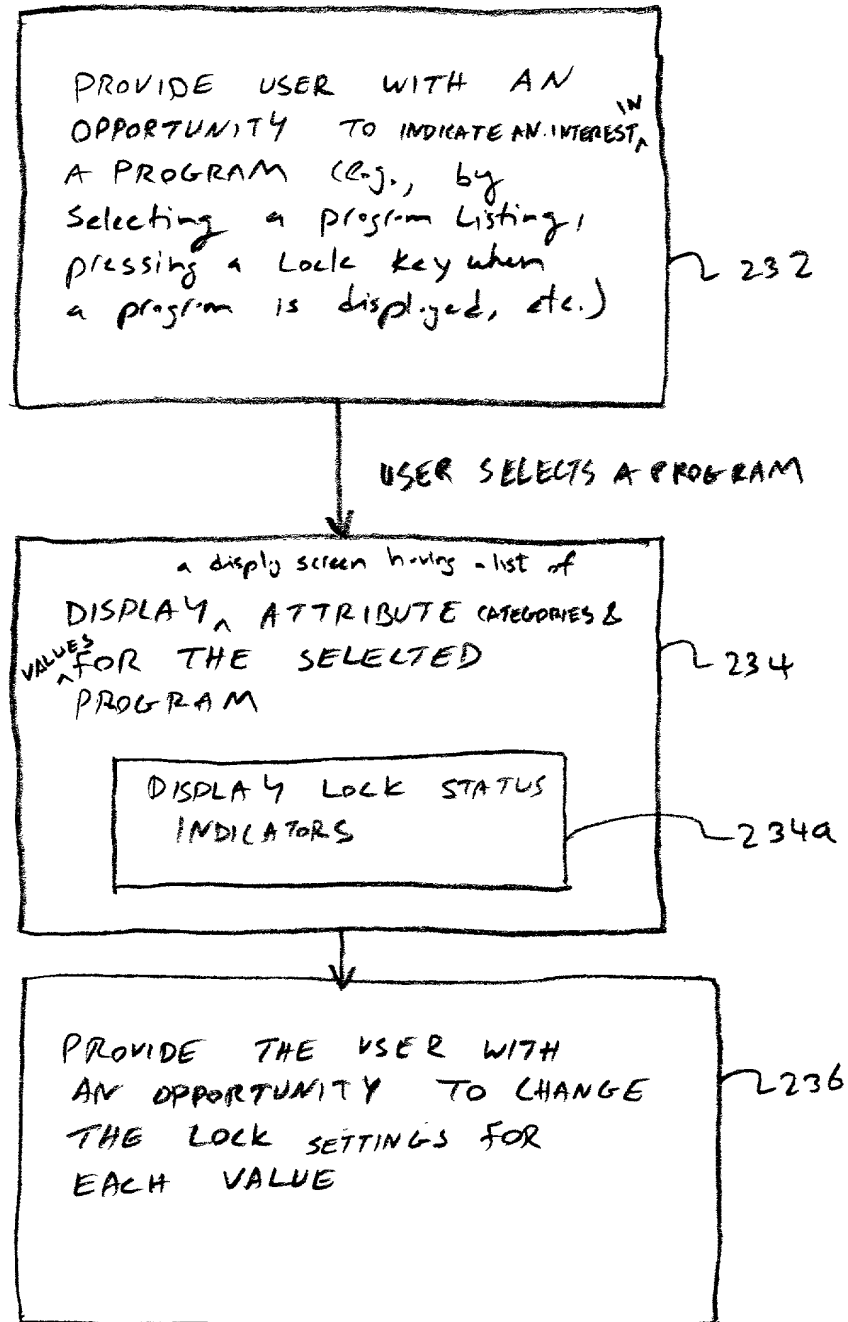
ADD A TITLE LOCK

APPLY CHANGES  
TO SELECTED ACCOUNTS

230

DISPLAY the SCREEN FROM THE PARENTAL CONTROL OPTION was initiated and Apply changes

Fig. 12





CH	TIME		
5	PROGRAM 1	PROGRAM 2	
7	PROGRAM 3	PROGRAM 4	PROGRAM 5
9	PROGRAM 6		PROGRAM 7
11	PROGRAM 8		
22	SIMPSONS	PROGRAM 10	

USER PRESSES LOCK KEY

238

USER ENTERS PARENT CODE

◀ JANE ▶

MOVIE RATING	N/A
TV RATING	TV-PG
CHANNEL	#22 (FOX)
TIME	8:00 PM
LOCK/UNLOCK TITLE	SIMPSONS

240

USER TOGGLES THE TV-PG LOCK SETTING FOR JANE

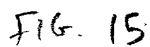
◀ JANE ▶

MOVIE RATING	N/A
TV RATING	TV-PG <input checked="" type="checkbox"/>
CHANNEL	#22 (FOX)
TIME	8:00 PM
LOCK/UNLOCK TITLE	SIMPSONS

242

FIG. 14

000000" 95557960




VIDEO OF  
APOCALYPSE NOW  
ON CHANNEL 50

252

USER  
SELECTS  
LOCK KEY

USER ENTERS  
PARENTAL CODE



MOVIE RATING R   
TV RATING N/A  
CHANNEL #50 (showtime)  
TIME 10:00 PM  
LOCK/UNLOCK TITLE APOCALYPSE NOW

black lock icon

254

APPLY

USER  
CHANGES  
THE  
R-RATED  
SETTING

MOVIE RATING R   
TV RATING N/A  
CHANNEL #50 (showtime)  
TIME 10:00 PM   
LOCK/UNLOCK TITLE APOCALYPSE NOW

black lock icon

256

black lock icon

APPLY

fig 16

USER  
SELECTS  
APPLY  
OPTION

ALLOW THE USER TO SELECT TO  
WHICH ACCOUNTS THE CHANGES SHOULD  
BE MADE

000000" 965555000



000000 "96557960

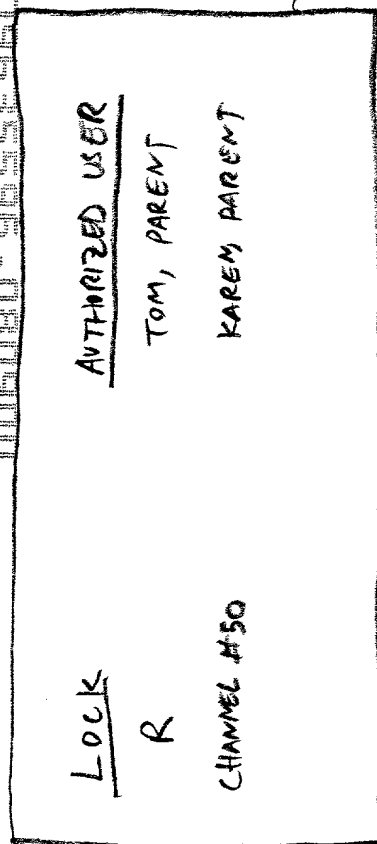


FIG. 18a

228

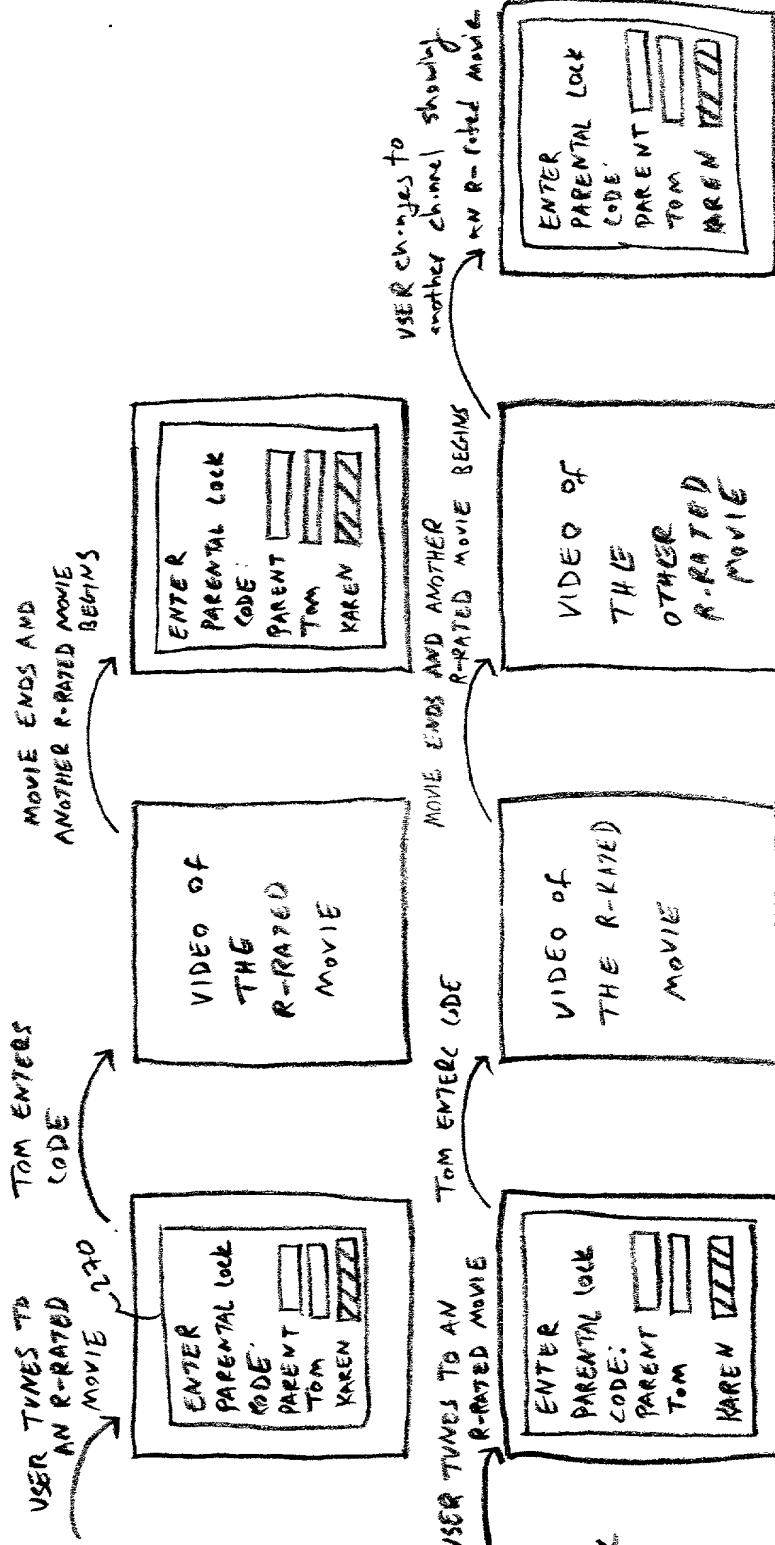


FIG. 18b

FIG. 18c

UV-15+

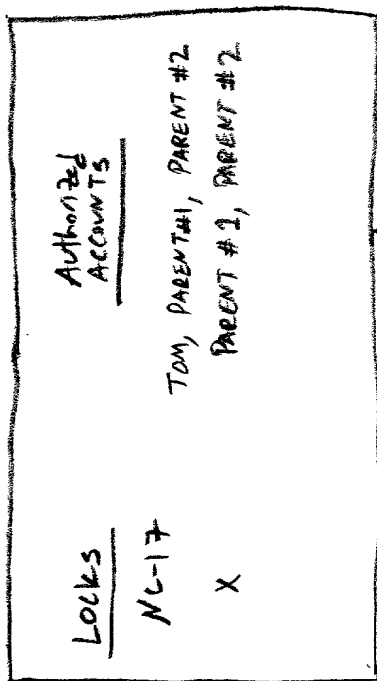
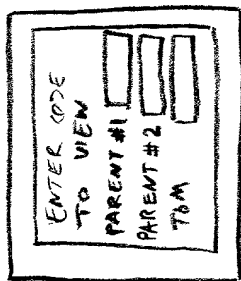


FIG. 19a

272

USER TUNES TO  
AN NC-17  
MOVIE



TOM ENTERS  
CODE

276

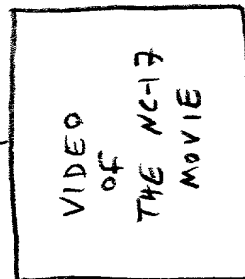


FIG. 19b

USER TUNES  
TO AN  
X MOVIE

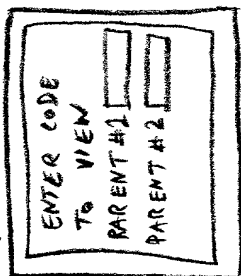


FIG. 19c

USER TUNES  
TO AN  
X MOVIE

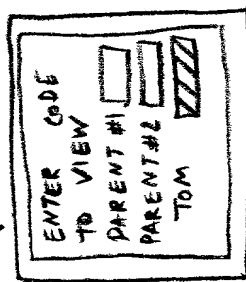


FIG. 19d

Cytotoxicity of the polymer	
Cell viability (%)	100
IC <sub>50</sub> (μg/ml)	100
LD <sub>50</sub> (μg/ml)	100

Biocompatibility of the polymer	
Cell viability (%)	100
IC <sub>50</sub> (μg/ml)	100
LD <sub>50</sub> (μg/ml)	100

KAREN, TOM, PARENT

TOM. PARENT

PARENT

Feb 20

872

PARENT  
ENTERS CODE

THE CHANNEL  
IS CHANGED TO A PG-13  
~~RE-RATED MOVIE~~

ENTER CODE:

PARENT

TOM

KAREN

VIDEO  
OF THE  
R-RATED  
MOVIE

VIDEO of  
THE PG-13  
RATED  
MOVIE

File 206

Tom's code  
is entered

USER TUNES TO A  
DIFFERENT CHANNEL  
ALSO SHOWING APOCAL

USER TUNES RACK  
TO CHANNEL #50  
TO RETURN T

ENTER CODE:

PARENT

Tom

VIDEO of  
APOLCALYPSE  
NOW on  
channel  
#50

ENTER CODE:

PARENT

Tom

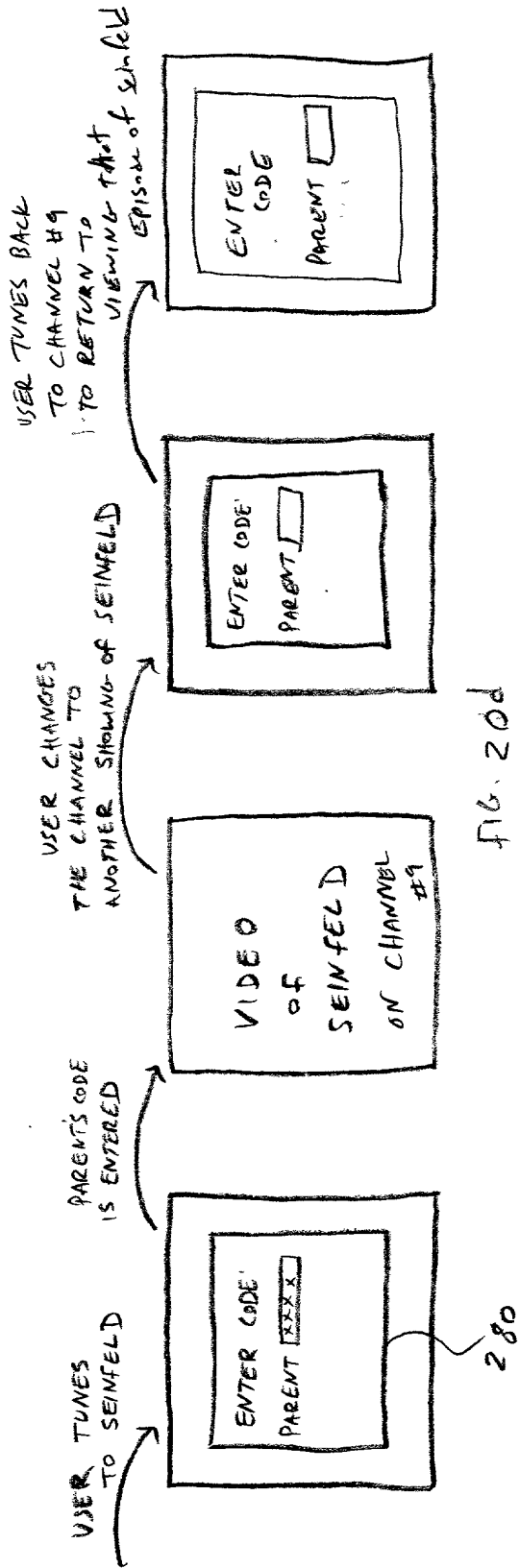
ENTER CODE

PARENT

TOM

207

QV-157





000000" 35555500

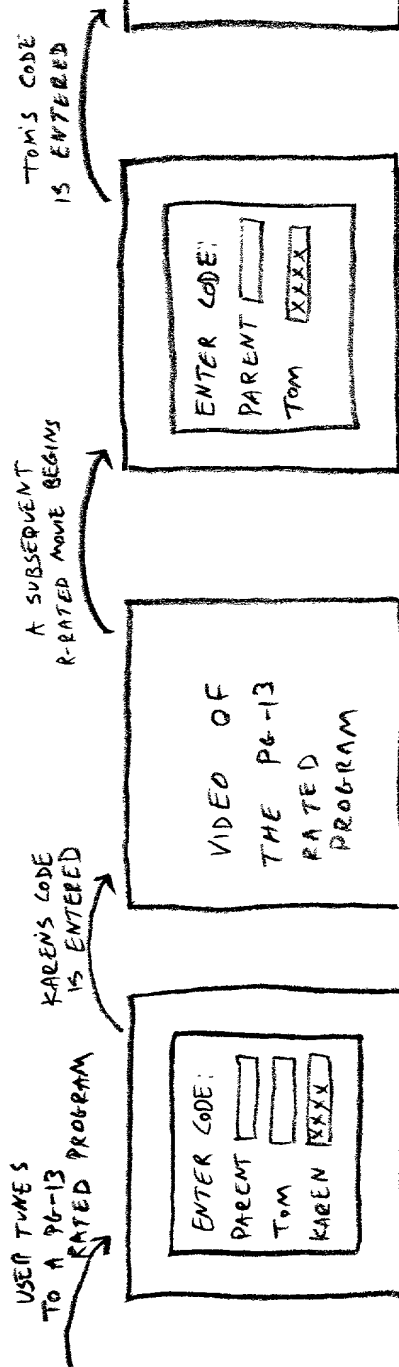
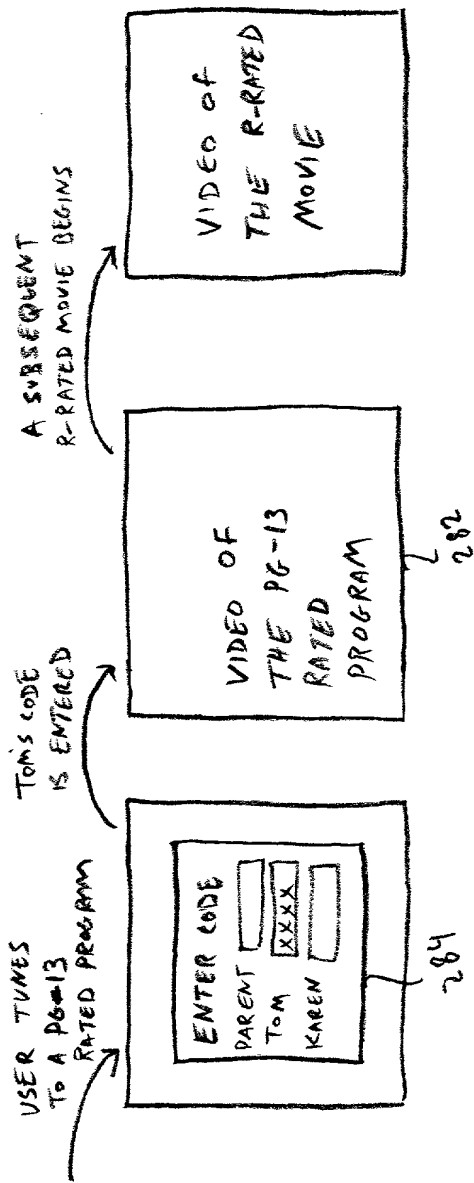


FIG. 21C

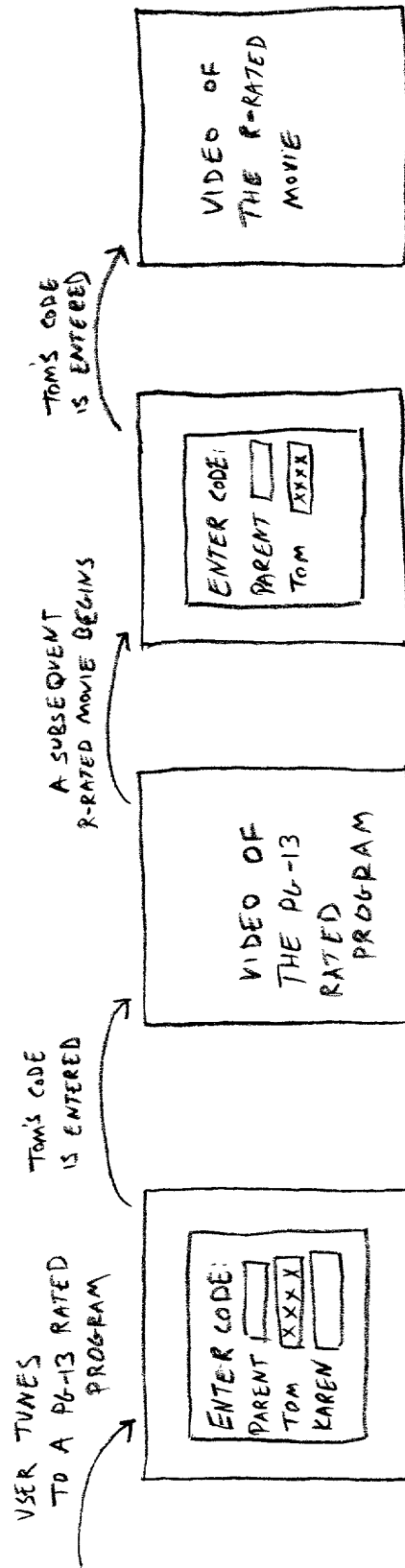


FIG 21b

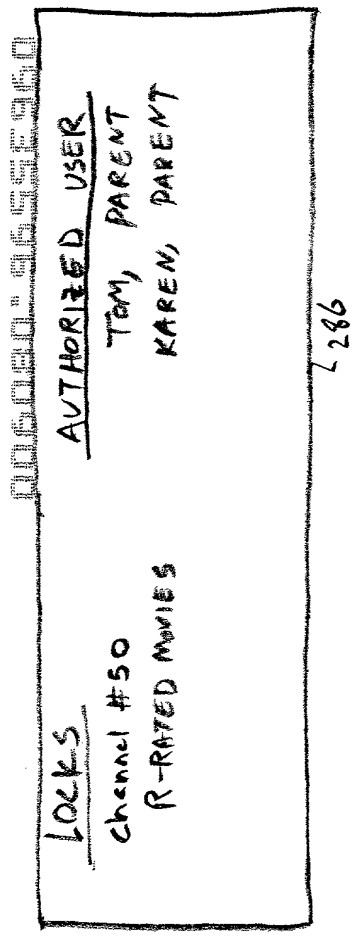


FIG. 22A

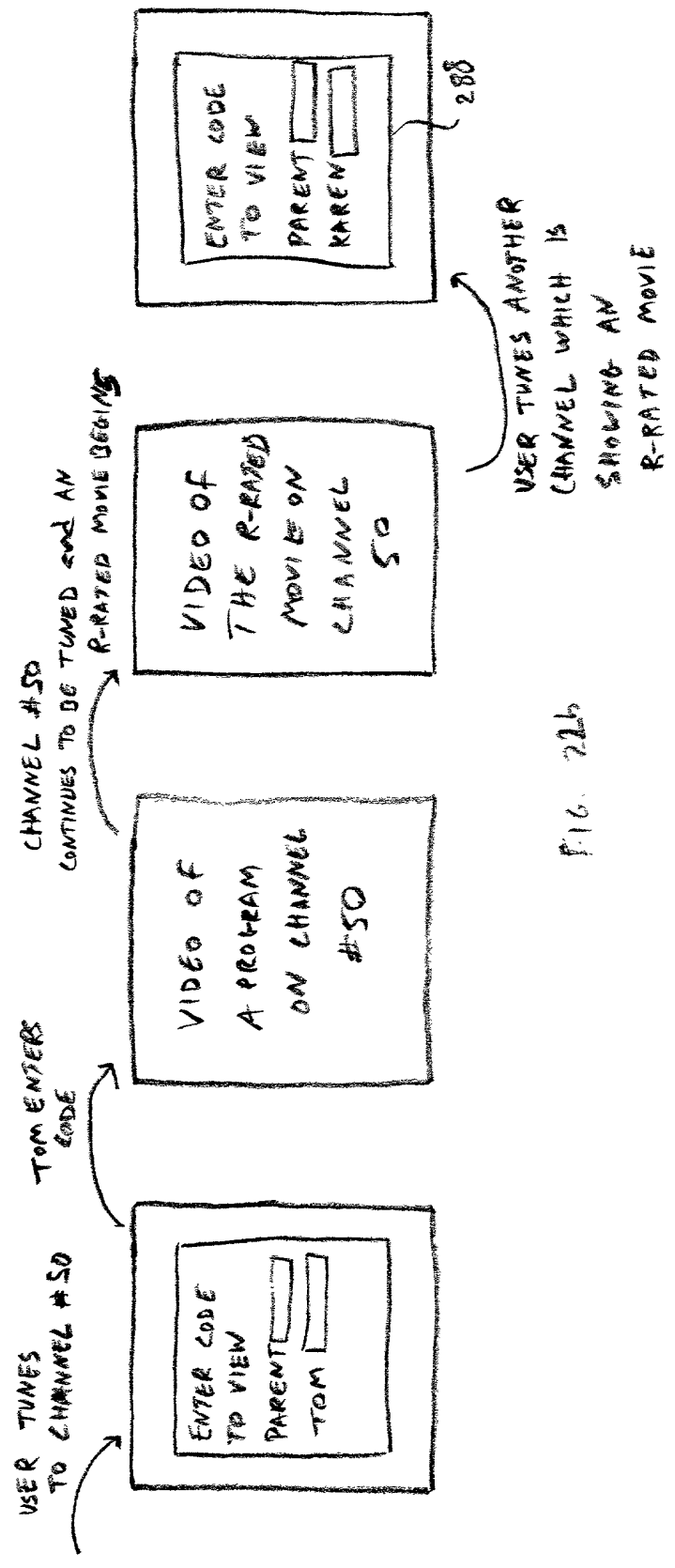


FIG. 22b

00000000 USER NAVIGATES  
TO MOVIE RATING AND  
REMOVES LOCK ON R-RATED MOVIES

MIKE ▾

MOVIE RATING ▾ 96 ▽

TV RATING ▾ TV-14 ▽

CHANNEL ▾ #55(HBO) ▽

TIME ▾ 11:00 PM ▽

LOCKED TITLES ▾ MOONSTRUCK ▽

ADD TO TITLE LOCK

2300

MIKE ▾

MOVIE RATING ▾ R ▽

TV RATING ▾ TV-14 ▽

CHANNEL ▾ #55(HBO) ▽

TIME ▾ 11:00 PM ▽

LOCKED TITLES ▾ MOONSTRUCK ▽

ADD TO TITLE LOCK

2302

FIG. 23A

USER TUNES  
A PG-RATED  
PROGRAM

ENTER  
CODE TO  
VIEW PROGRAM  
PARENT  
TOM

USER  
TUNES  
AN R-RATED  
PROGRAM

VIDEO OF  
THE R-RATED  
MOVIE

USER TUNES  
AN R-RATED  
PROGRAM

Video of  
the R-rated  
Movie

USER TUNES  
A PG-RATED  
PROGRAM

VIDEO  
OF THE  
PG-RATED  
PROGRAM

FIG. 23b

FIG. 23c

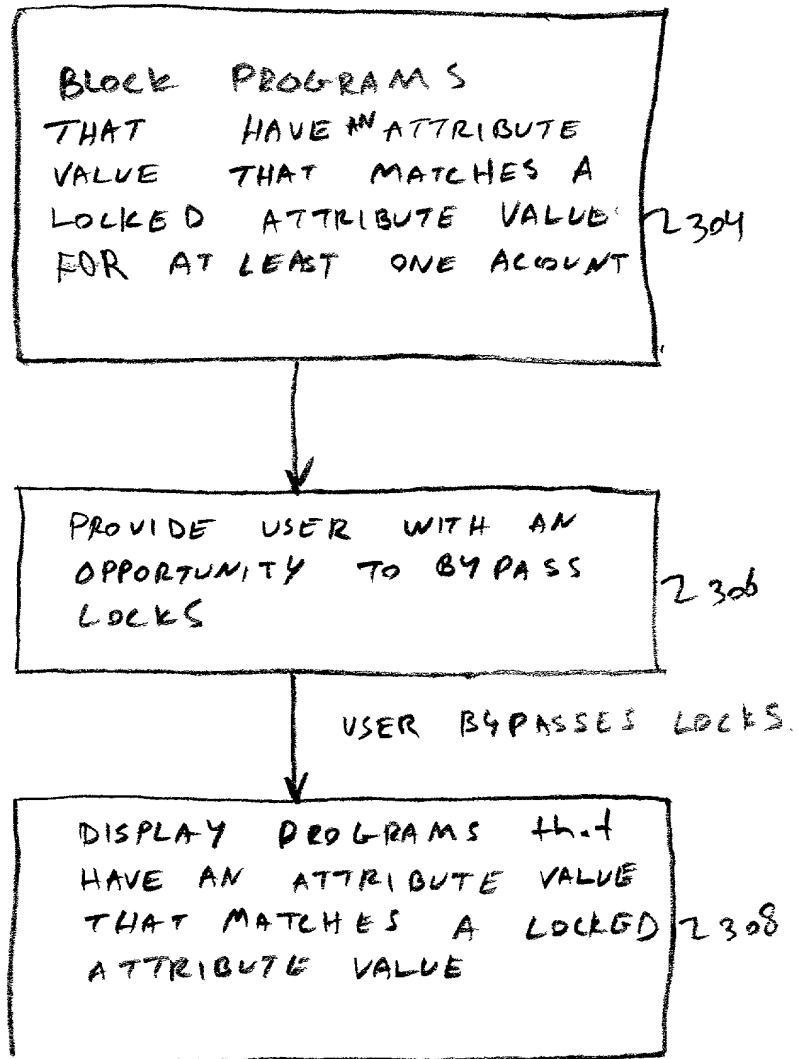


FIG. 24

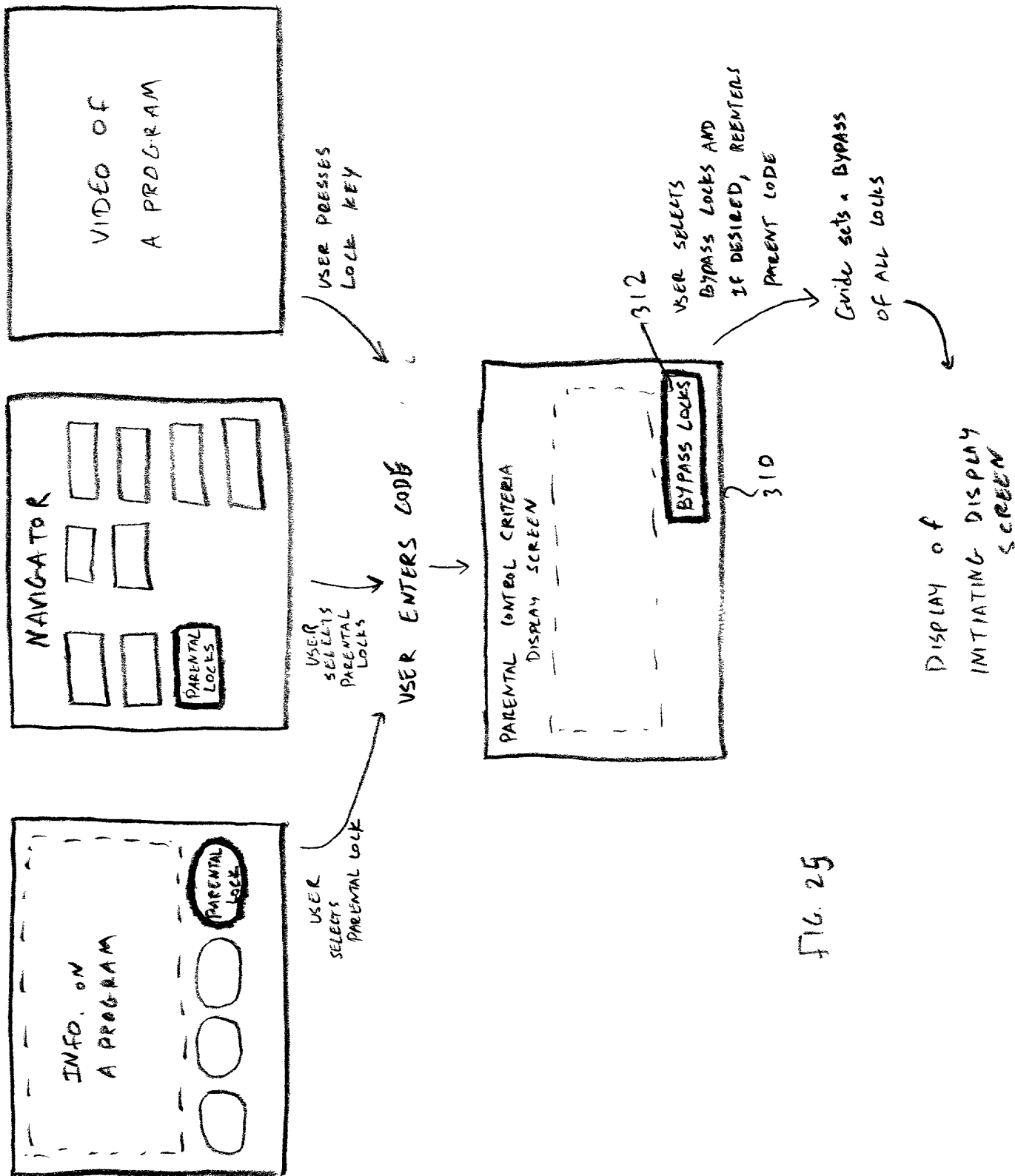


FIG. 25

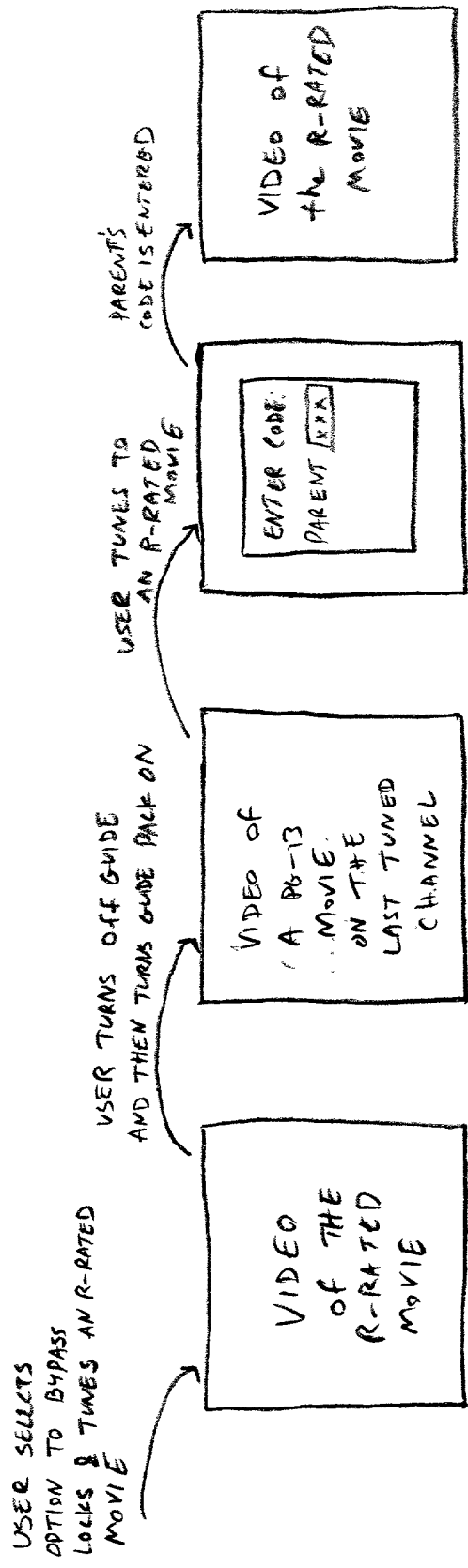
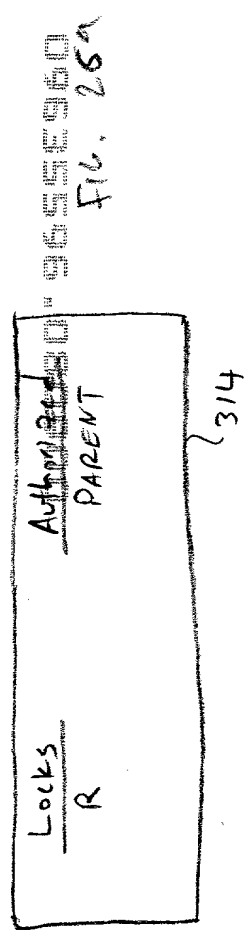
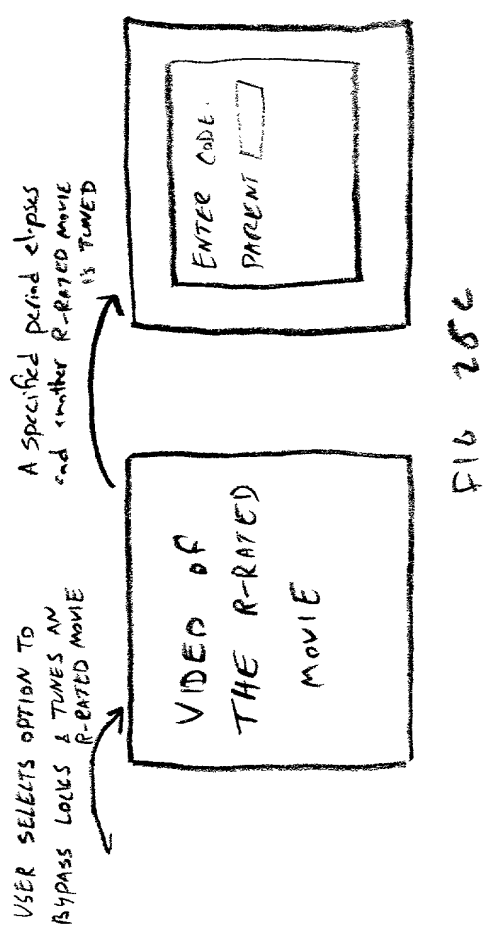


FIG. 25b



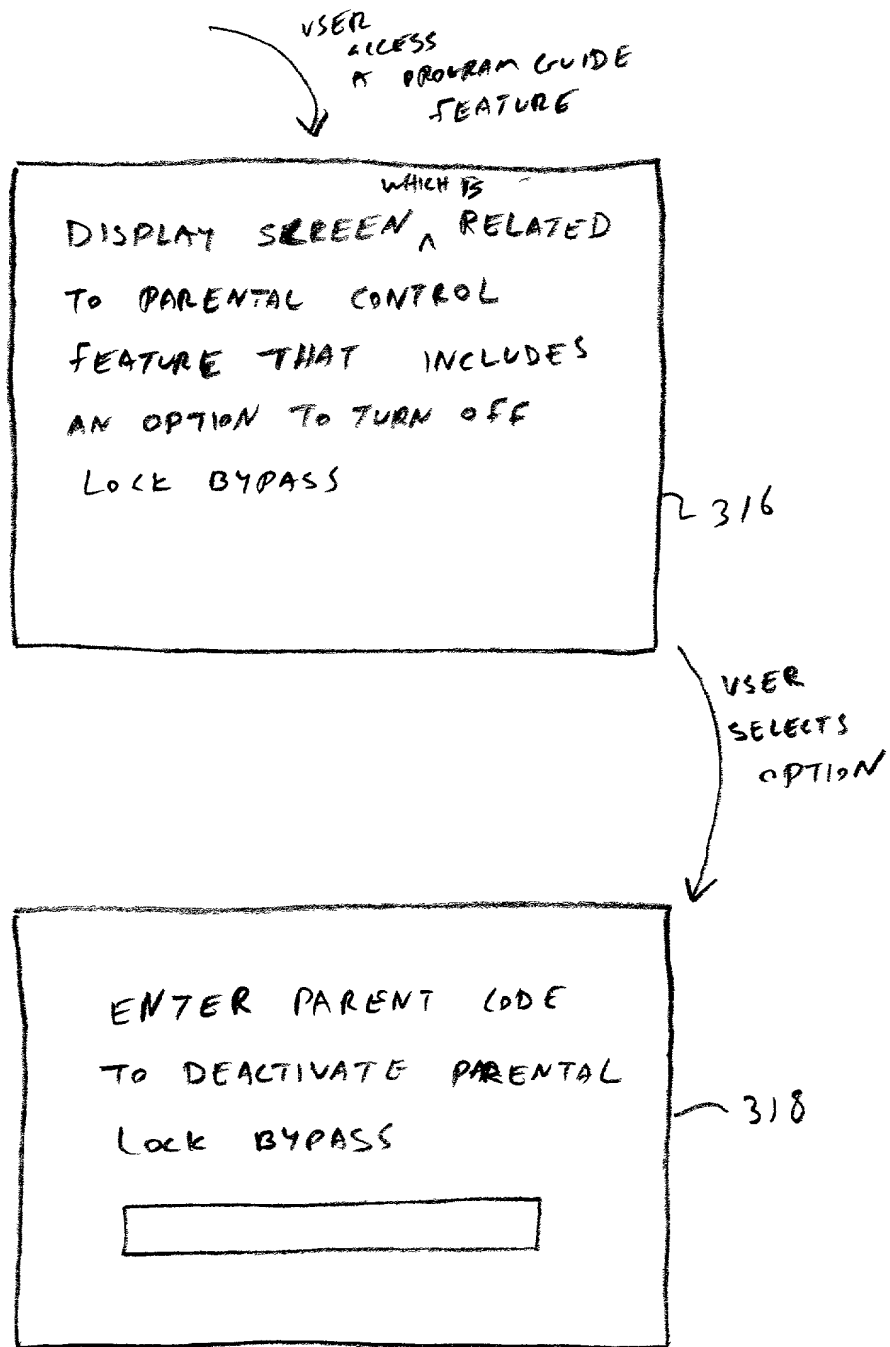


FIG. 27



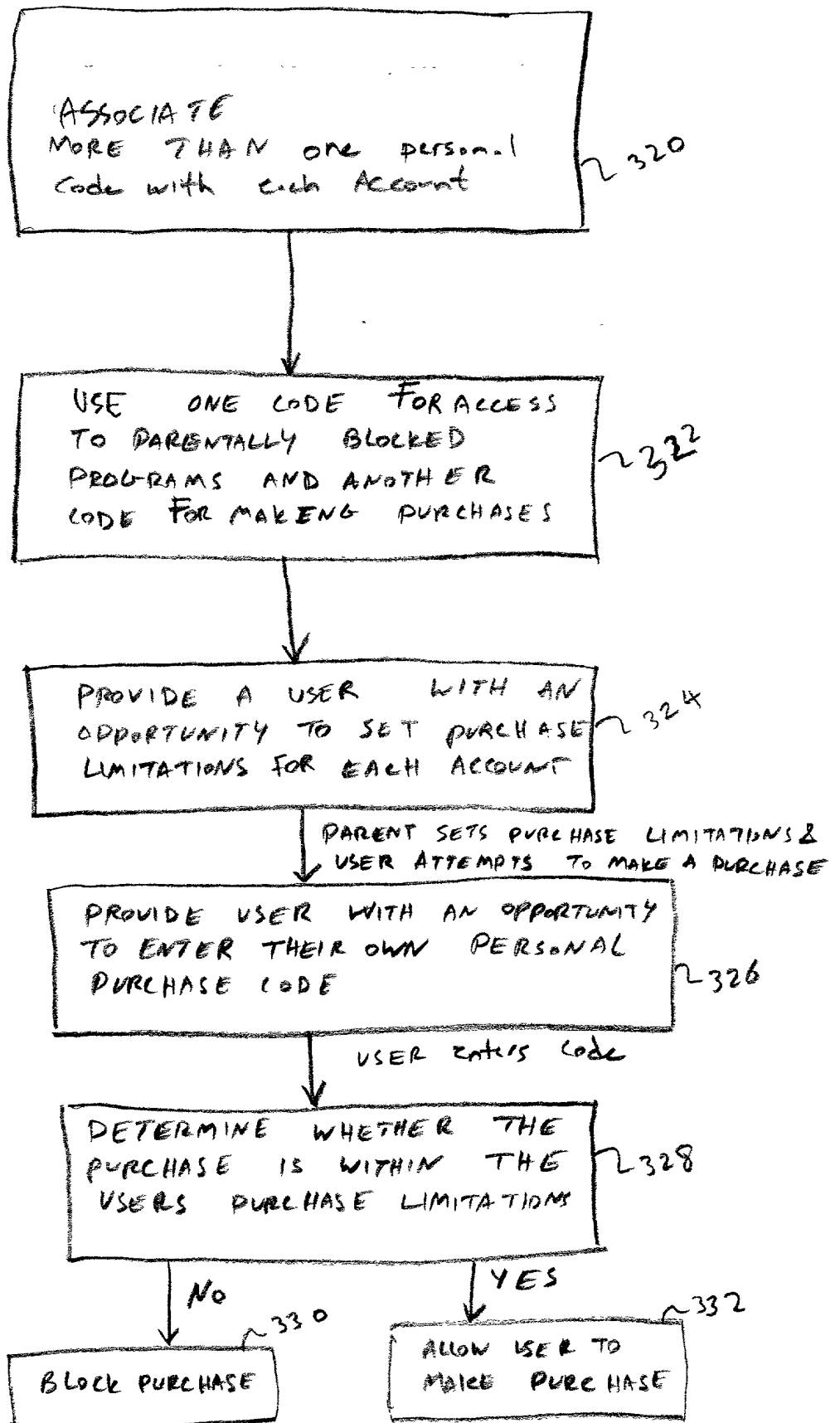


FIG. 28

00000" 96552360

NAVIGATOR

PURCHASE CONTROL 340

334

USER  
SELECTS  
PURCHASE  
CONTROL  
OPTION

ENTER PARENTAL PURCHASE  
CONTROL CODE

PARENT

336

A PURCHASE  
CODE  
IS  
ENTERED

◀ JANE ▶

AUTHORIZED TO PURCHASE
 ▶

SPENDING LIMIT PER MONTH
 ▶

AUTHORIZED PURCHASE

PAY-PER-VIEW

MERCHANDISE

PREMIUM SERVICE

338

340

342

FIG 29

000000" 965555360

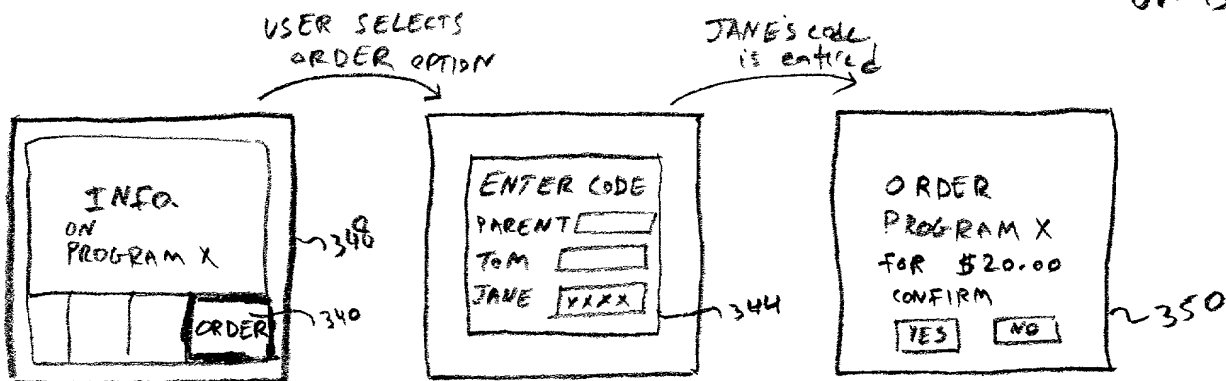


FIG. 30A

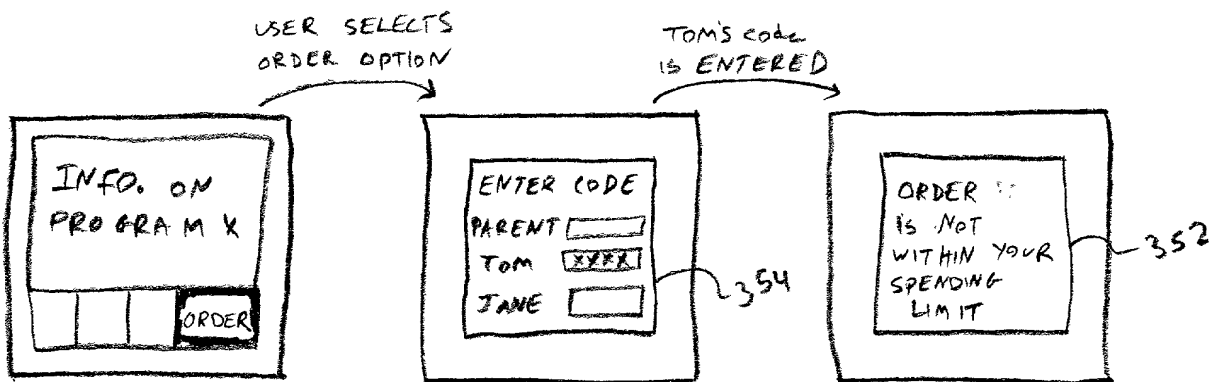


FIG. 30B

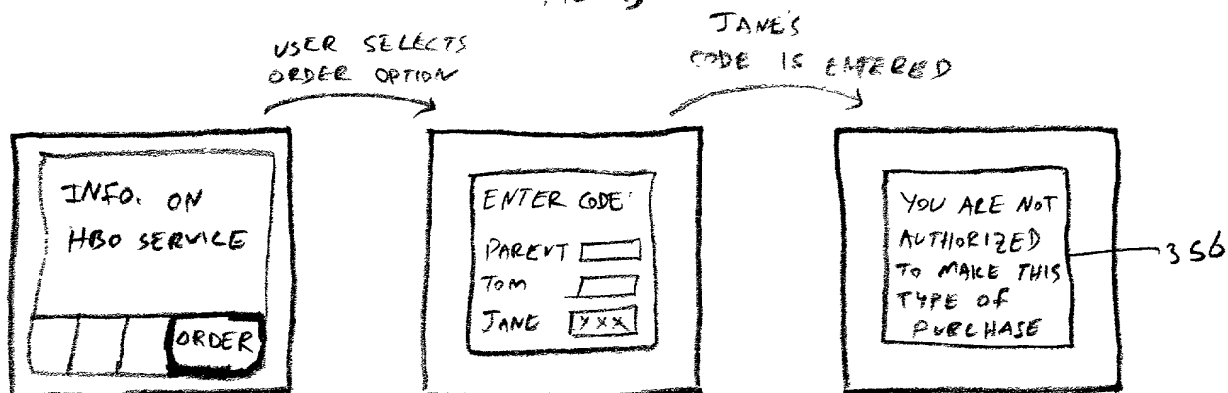


FIG. 30C

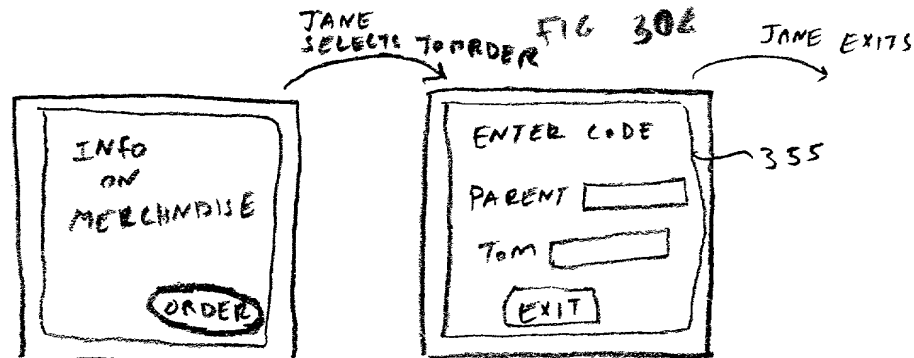


FIG. 30D

000000" 965555 9650

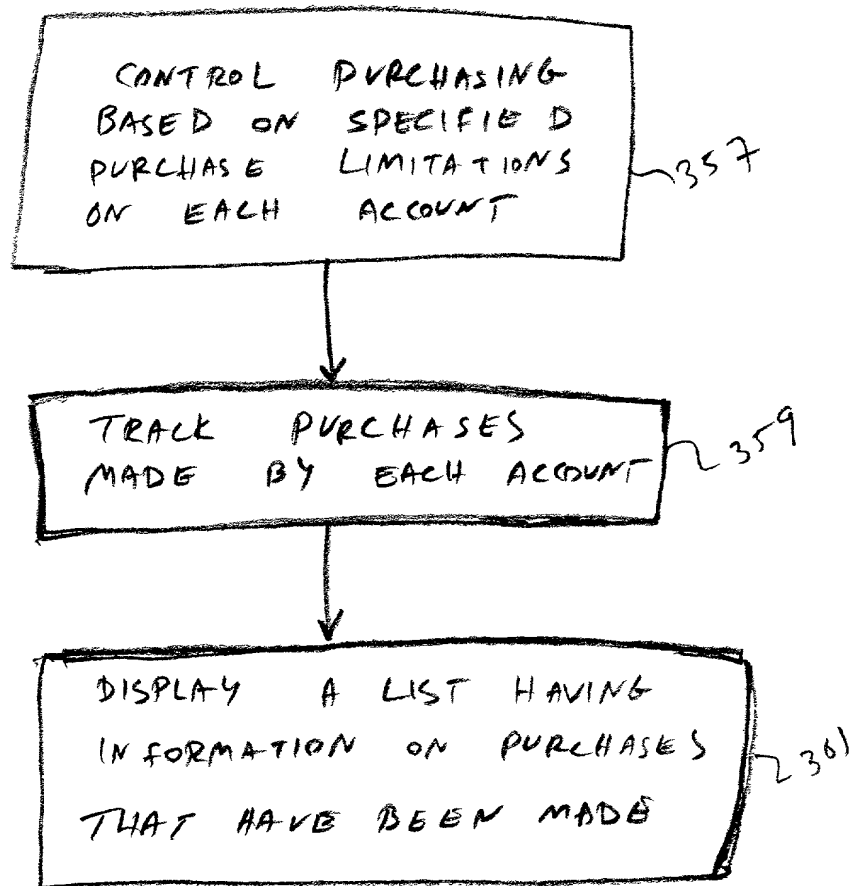


FIG. 31

363



— 367

365

4358

316

Min DUE

no. 32c

ALLOW ACCOUNTS TO BE GIVEN  
DIFFERENT ACCESS LEVELS TO PROGRAM  
BASED ON  
THEIR PARENTAL CONTROL CRITERIA

362

TRACK USER ACCESS TO  
PARENTALLY LOCKED  
PROGRAMS (C.S., PROGRAMS  
THAT WERE DISPLAYED  
WHEN A USER'S PERSONAL  
CODE WAS ENTERED

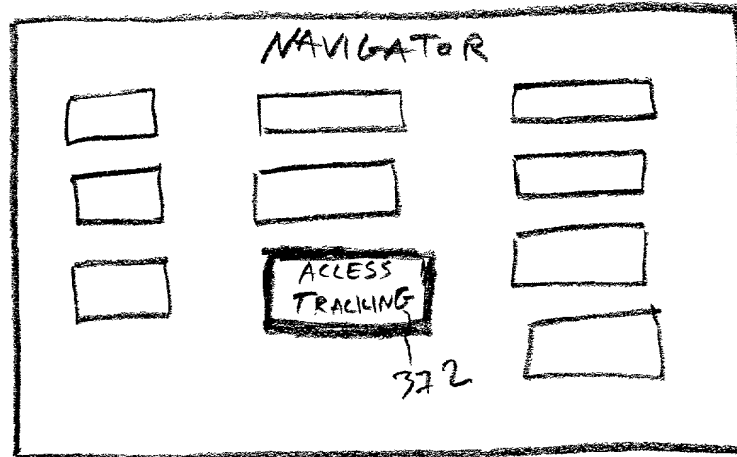
364

DISPLAY A LIST  
HAVING INFORMATION  
RELATED TO USER ACCESS

366

FIG 33

000000" 06557960



USER  
SELECTS  
ACCESS  
TRACKING  
OPTION

<u>WHEN ACCESSED</u>	<u>PROGRAMS ACCESSED</u>	<u>ACCESSING ACCOUNT</u>
1/18	APOCALYPSE NOW	KAREN
1/16	SEINFELD	TOM
1/16	FRAZIER	PARENT
1/14	THE TALENTED MR RIPLEY	PARENT
.	.	.
.	.	.
.	.	.
.	.	.
.	.	.

2370

FIG. 34

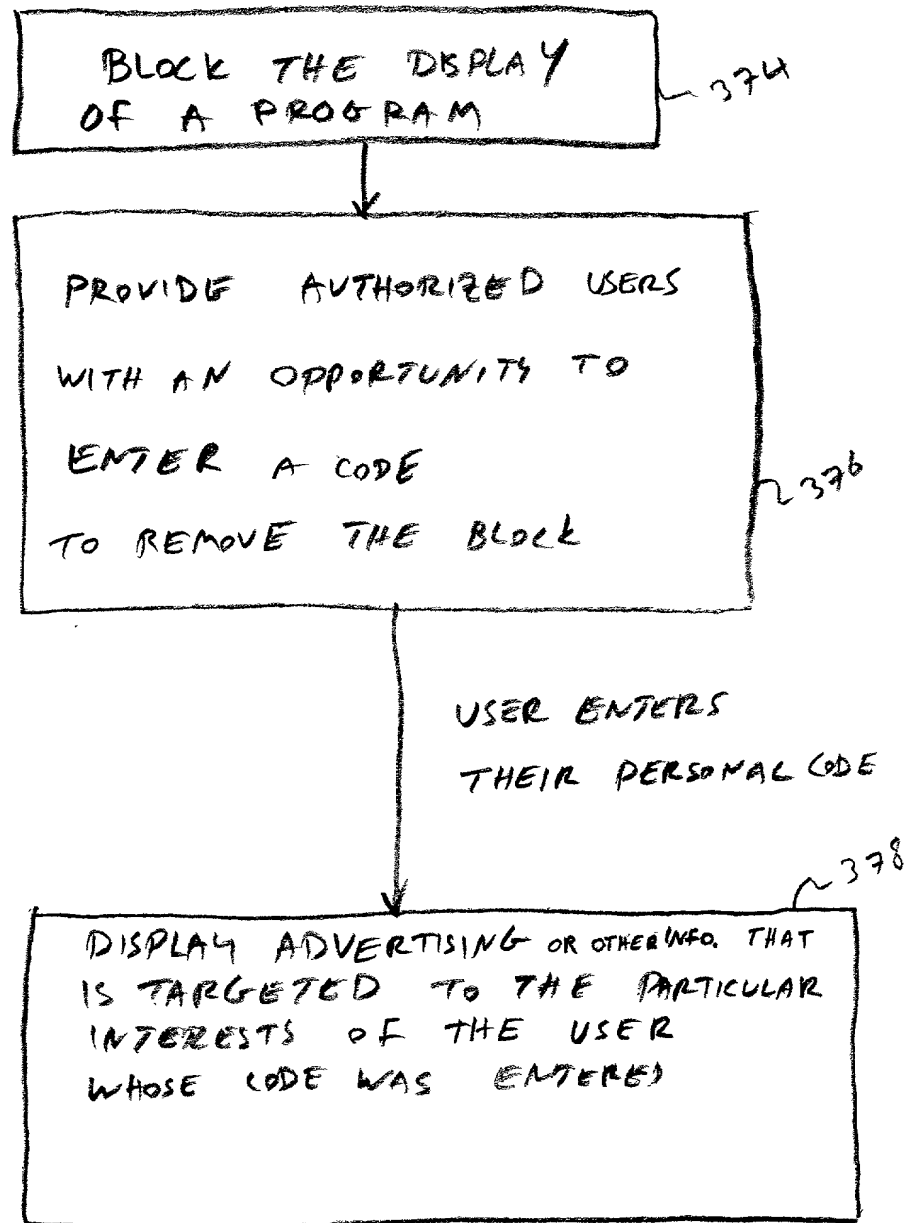


FIG. 35





380

PARENTAL CONTROL SETUP

SINGLE ACCOUNT CONTROL ☒ ☐ MULTI-ACCOUNT CONTROL

PROGRAM LOCKING CONTROL ☒ ☐ OFF

PURCHASE CONTROL ☒ ☐ OFF

CHANGE YOUR CODES

FIG. 37a

MOVIE RATING

TV RATING

CHANNEL

TIME

LOCKED TITLES

ENTER TITLE TO LOCK

FIG. 37b


AUTHORIZED TO PURCHASE ☒ YES ☐

SPENDING LIMIT PER MONTH

Authorized to purchase  
ppv  
merch-disc ☒ YES ☐ NO

FIG. 37c

005080 065556960



File 371

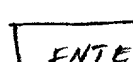


FIG. 37c

DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

INTERACTIVE TELEVISION PROGRAM GUIDE  
SYSTEM WITH MULTIPLE ACCOUNT PARENTAL CONTROL

the specification of which

(check      ☒ is attached hereto  
one)

☐ was filed on \_\_\_\_\_ as  
Application Serial No. \_\_\_\_\_  
and was amended on \_\_\_\_\_.  
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I do not know and do not believe that the invention was ever patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application.

I do not know and do not believe that the invention was in public use or on sale in the United States of America more than one year prior to this application.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known by me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby claim priority benefits under Title 35, United States Code, § 119 of any United States provisional application listed below:

60/147,982  
(Application Serial No.)

August 9, 1999  
(Filing Date)

Express Mail  
#EJ852798675US

005030-9655950

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known by me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
--------------------------	---------------	---

(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
--------------------------	---------------	---

As a named inventor, I hereby appoint the following attorneys or agents to prosecute this application and transact all business in the United States Patent and Trademark Office connected therewith:

Margaret A. Pierri, (Reg. No. 30,709)

Matthew T. Byrne, (Reg. No. 40,934)

Pejman Sharifi (Reg. No. 45,097)

005080" 96555550

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FISH & NEAVE  
1251 Avenue of the Americas  
New York, New York 10020-1104

Direct telephone calls to: Pejman Sharifi  
(212) 596-9000

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of first inventor Benjamin W. Herrington

First Inventor's signature \_\_\_\_\_ Date \_\_\_\_\_

Residence 725 W. 20th Street, Tulsa, Oklahoma 74107

Citizenship United States

Post Office Address 725 W. 20th Street, Tulsa Oklahoma 74107

Full name of second joint inventor Edward B. Knudson

Second Inventor's signature \_\_\_\_\_ Date \_\_\_\_\_

Residence 11055 West Rowland Avenue, Littleton, Colorado 80127

Citizenship United States

Post Office Address 11055 West Rowland Avenue, Littleton, Colorado 80127

0060220 26333950

Full name of third joint inventor Michael D. Ellis

Third Inventor's signature \_\_\_\_\_ Date \_\_\_\_\_

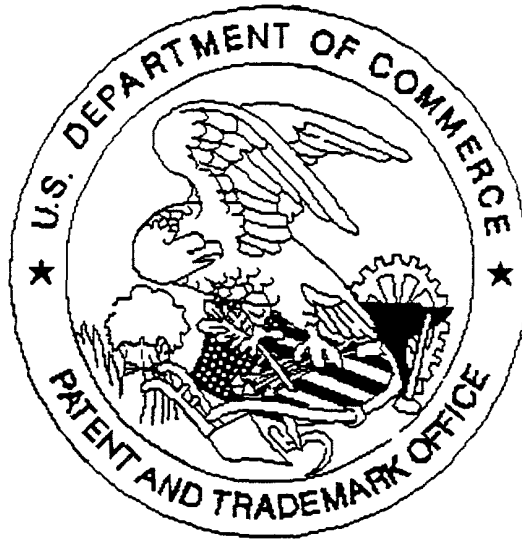
Residence 1300 Kingwood Place, Boulder, Colorado 80304

Citizenship United States

Post Office Address 1300 Kingwood Place, Boulder, Colorado  
80304

000000" 00000000

United States Patent & Trademark Office  
Office of Initial Patent Examination -- Scanning Division



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for scanning. (Document title)

☐ Page(s) \_\_\_\_\_ of \_\_\_\_\_ were not present  
for scanning. (Document title)

☒ Scanned copy is best available. **DRAWINGS**